



STATE ADMINISTRATION

Exhibit No. 2

Date 1-26-07

~~BILL NO. Committee Info Request~~

Montana Legislative Services Division

Office of Research and Policy Analysis

David D. Bohyer, Director

January 24, 2007

TO: Sen. Carolyn Squires, Presiding Officer, Sen. State Admi
Members of the Senate State Administration Committee

FROM: Dave Bohyer ^{Dave B}

RE: Pension systems--unfunded actuarially accrued liabilities

Request

The Committee has requested information on two options -- increasing employer contributions and issuing general obligation (GO) bonds -- to reduce the amortization period of unfunded actuarially accrued liabilities (UAL) in the Public Employees' Retirement System (PERS) and the Teachers' Retirement System (TRS) to 30 years.

Information Sources

In preparing this response, I have obtained information from different sources, including:

- the staff of the Legislative Audit Division;
- the Teachers' Retirement System, State of Montana: Actuarial Valuation, 7/1/06;
- the fiscal note for HB 159;
- the Comprehensive Annual Financial Report, MPERB, June 30, 2006;
- the Comprehensive Annual Financial Reports, TRB, 6/30/2006, and 6/30/2005;
- the staff of the MPERA.

I have presumed that all of the information is accurate. Using different combinations of the information, I have reported or constructed five scenarios that assess the implications of increasing employer contributions and of issuing GO bonds. For convenience, I have labeled the scenarios as 0, 1, 2, 3, and 4.

Limitations

Some of the data obtained is traceable to primary sources and verifiable; other data is taken at face value. Some of the data was compiled or reported in 2005 or earlier, but most was compiled or reported in 2006. Both factors--source and timing--can affect

Important Considerations

Accuracy and precision

At first glance of the information in the Composite Table (appended), a reader might be--should be--struck by the differences in the estimated savings of bonding over increasing contributions. Some \$85 - \$120 million in savings is probably enough to pique interest, but \$840 million could be the colloquial "no brainer".

However, as one drills deeper into the data, calculations, findings, and conclusions, it becomes questionable whether \$840 million savings is really to be had. With the magnitude of the numbers and amounts under scrutiny, small differences in data points and assumptions can have significant implications for the results of calculations. The following table illustrates the implications of small changes.

A Change of:	Change of Cost over 30-year Term of Bonds (\$ million)		
	Low	High	Difference
1 basis point in the employer PERS contribution rate ⁴	\$ 0.195	\$ 5.206	\$5.011
1 basis point in the employer TRS contribution rate	0.132	3.422	\$3.290
1 basis point in PERS bond interest %	0.594	0.616	\$0.022
1 basis point in TRS bond interest %	0.916	0.982	\$0.066
\$1 million in PERS bond principal	1.988	2.158	\$0.170
\$1 million in TRS bond principal	1.988	2.158	\$0.170
1 basis point in wage growth (PERS)	1.065	1.131	\$0.066

The timing of the payoff

Stipulating the reasonableness of the assumptions underlying each of the scenarios at the time each was prepared and simply assuming the accuracy of the calculations, it is notable that, although there are savings under each scenario, *when the savings occur varies considerably*.

⁴ A basis point equals 1/100 of 1%. Therefore, an increase of 1 basis point in, e.g., a 2% employer contribution rate would result in an employer contribution rate of 2.01%.

For example, under scenario 0, the annualized amount of increased employer contributions exceeds the annualized amount of bond payments early in the 5th year following the increase in employer contributions and issuing the bonds. By midway through the 9th year after implementation, the accumulated savings from bond payments over accumulated increased employer contributions turns positive and grows rapidly. The "net benefit" begins to accrue to taxpayers in just over 9 years.

In contrast, under scenarios 1 through 4, the annualized amount of increased employer contributions does not exceed the annualized amount of bond payments until the 13th year (at the earliest, under scenario 2) and the accumulated savings from bond payments over accumulated increased employer contributions doesn't turn positive until midway through the 24th year (at the earliest, under scenarios 2 and 4).

Allocating the cost

Another important consideration is allocating the cost to reduce the amortization period of the UAL in the PERS and TRS. As used here, "allocation" refers to the source of funds and to the level or unit of government.

The debt service for state-issued GO bonds is customarily paid by a statutory appropriation from the state general fund. The state general fund is composed of state-sourced general revenue and therefore, the bulk of money to pay the debt service comes primarily from Montanans paying taxes, fees, etc., to the state.

In contrast, employer contributions are paid from funds more generally available to covered employers -- state and local general funds, state special revenue, district and special district revenue, federal revenue, et al. -- that is used to pay for personal services in different programs and in different levels or units of government.

One might be tempted to ask, "What difference does that make? It all comes from the same taxpayers, doesn't it?"

Well, not quite. In the state budget, for example, approximately 40% of personal services costs (wages, salaries, and benefits) is paid for with state general fund. The remaining 60% of personal services costs are paid by non-general funds.⁵ Additionally, approximately one-half of the membership of PERS is employed by governmental entities that are not the state and nearly all of the TRS membership is employed by non-state governmental entities. Paying for state-issued GO bonds is typically the sole responsibility of the state general fund. Paying increased employer contributions is the responsibility of the employer from whatever funds are available to the employer.

⁵ Source: Legislative Fiscal Division staff. Similar comparisons or ratios for local governments, K-12 schools, and the university system are not readily available.

Therefore, the burden of paying the cost of increased employer contributions is spread far wider than the burden of paying the debt service on state-issued GO bonds.

Conclusion

In analyzing the cost of increased employer contributions and the cost of GO bonds, the variable data and assumptions on which calculations are based can have significant implications for the estimates generated. The general accuracy of the data is critical, but the precision of the data also has some bearing on the ultimate results that form the basis for consideration and, hence, public policy.

As a means to reduce the amortization periods of UAL in the PERS and TRS to 30 years, the total cost of issuing and repaying GO bonds is probably less than the total cost of increasing employer contributions. That said, the "savings" from issuing bonds versus increased contributions occurs relatively late in the 30-year term of the bonds.

Additionally, the "savings" from bonding does not accrue primarily to the state general fund. Rather, the savings from bonding accrue to employers and programs whose funding comes from sources other than the state general fund. These employers would include state agencies that depend largely on federal or other state non-general fund revenue (Department of Public Health and Human Services, Department of Labor, Department of Transportation, Department of Fish, Wildlife, and Parks, et al.), elementary and secondary schools, municipalities, counties, myriad special districts or special levies, and the university system, among others.

Composite Table
Comparison of 5 scenarios for estimates of contribution rate increases and pension bonds
PERS and TRS

Cost of Scenario	0				1				2				3				4				
	Employer Contributions (\$ million)	Bonds (\$ million)	Net Savings (\$ million)	Net (\$ million)	Employer Contributions (\$ million)	Bonds (\$ million)	Net (\$ million)	Employer Contributions (\$ million)	Bonds (\$ million)	Net (\$ million)	Employer Contributions (\$ million)	Bonds (\$ million)	Net (\$ million)	Employer Contributions (\$ million)	Bonds (\$ million)	Net (\$ million)	Employer Contributions (\$ million)	Bonds (\$ million)	Net (\$ million)		
PERS	\$849	\$530	\$319	\$623	\$574	\$49	\$660	\$574	\$86	\$621	\$574	\$47	\$660	\$574	\$86	\$889	\$854	\$35	\$889	\$854	\$35
TRS	\$1,395	\$875	\$520	\$889	\$854	\$35	\$1,549	\$1,428	\$122	\$1,511	\$1,428	\$83	\$1,549	\$1,428	\$122	\$1,549	\$1,428	\$122	\$1,549	\$1,428	\$122
Total	\$2,244	\$1,405	\$839	\$1,512	\$1,428	\$85	\$1,549	\$1,428	\$122	\$1,511	\$1,428	\$83	\$1,549	\$1,428	\$122	\$1,549	\$1,428	\$122	\$1,549	\$1,428	\$122
PERS Assumptions*				PERS Assumptions*				PERS Assumptions*				PERS Assumptions*				PERS Assumptions*					
Single rate increase 7/1/2006 @	1.63%	Supplemental rate 7/1/2007 @	0.56%	Supplemental rate 7/1/2007 @	0.56%	Supplemental rate 7/1/2007 @	0.56%	Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2007 @	0.56%	Supplemental rate 7/1/2007 @	0.56%		
Taxable bonds @	5.25%	Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2009 @	1.13%	Payroll growth - annual	4.25%	Payroll growth - annual	4.25%	Payroll growth - annual	4.25%	Payroll growth - annual	4.25%	30-yr. taxable bonds @	6.00%	30-yr. taxable bonds @	6.00%	30-yr. taxable bonds @	6.00%
Bond principal (\$ million)	\$266.40	30-yr. taxable bonds @	6.00%	\$286.00	30-yr. taxable bonds @	6.00%	\$286.00	Bond principal (\$ million)	\$266.00	Bond principal (\$ million)	\$266.00	Bond principal (\$ million)	\$266.00	Bond principal (\$ million)	\$266.00	Bond principal (\$ million)	\$266.00	Bond principal (\$ million)	\$266.00	Bond principal (\$ million)	\$266.00
Monthly payment	\$1,471,071	Bond principal (\$ million)	\$1,594,804	\$1,594,804	Monthly payment	\$1,594,804	\$1,594,804	Monthly payment	\$1,594,804	Monthly payment	\$1,594,804	Monthly payment	\$1,594,804	Monthly payment	\$1,594,804	Monthly payment	\$1,594,804	Monthly payment	\$1,594,804	Monthly payment	\$1,594,804
Annual bond payment	\$17,652,852	Monthly payment	\$19,137,653	\$19,137,653	Annual bond payment	\$19,137,653	\$19,137,653	Annual bond payment	\$19,137,653	Annual bond payment	\$19,137,653	Annual bond payment	\$19,137,653	Annual bond payment	\$19,137,653	Annual bond payment	\$19,137,653	Annual bond payment	\$19,137,653	Annual bond payment	\$19,137,653
TRS Assumptions**				TRS Assumptions**				TRS Assumptions**				TRS Assumptions**				TRS Assumptions**					
Non-MUS rate increase 7/1/06 @	4.06%	Supplemental rate 7/1/2007 @	2.00%	Supplemental rate 7/1/2007 @	2.00%	Supplemental rate 7/1/2007 @	2.00%	Supplemental rate 7/1/2009 @	2.38%	Supplemental rate 7/1/2009 @	2.38%	Supplemental rate 7/1/2009 @	2.38%	Supplemental rate 7/1/2009 @	2.38%	Supplemental rate 7/1/2007 @	2.00%	Supplemental rate 7/1/2007 @	2.00%		
MUS rate increase 7/1/06 @	1.47%	Supplemental rate 7/1/2009 @	2.38%	Supplemental rate 7/1/2009 @	2.38%	Supplemental rate 7/1/2009 @	2.38%	30-yr. taxable bonds @	6.00%	30-yr. taxable bonds @	6.00%	30-yr. taxable bonds @	6.00%	30-yr. taxable bonds @	6.00%	Bond principal (\$ millions)	\$395.50	Bond principal (\$ millions)	\$395.50	Bond principal (\$ millions)	\$395.50
Taxable bonds @	5.25%	30-yr. taxable bonds @	6.00%	\$385.50	Bond principal (\$ millions)	\$385.50	\$385.50	Monthly bond payment	\$2,371,222	Monthly bond payment	\$2,371,222	Monthly bond payment	\$2,371,222	Monthly bond payment	\$2,371,222	Monthly bond payment	\$2,371,222	Monthly bond payment	\$2,371,222	Monthly bond payment	\$2,371,222
Bond principal (\$ million)	\$440.30	Bond principal (\$ millions)	\$385.50	\$2,434,353	Monthly bond payment	\$2,434,353	\$2,434,353	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668
Monthly bond payment	\$2,434,353	Monthly bond payment	\$2,434,353	\$29,176,236	Annual bond payment	\$29,176,236	\$29,176,236	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668	Annual bond payment	\$28,454,668
Annual bond payment	\$29,176,236	Annual bond payment	\$29,176,236																		
Calculations by Jim Gillett, Legislative Audit Division, Dec. 2005				Calculations by Dave Bohyer, Legislative Services Division, Jan 2007				Calculations by Dave Bohyer, Legislative Services Division, Jan 2007				Calculations by Dave Bohyer, Legislative Services Division, Jan 2007				Calculations by Dave Bohyer, Legislative Services Division, Jan 2007					
* Source: Legislative Audit Division, Dec. 2005, see MPERF and TRS	* Data from fiscal note for HB 159; assumption # 5, Payroll growth of 4.25% annually. "Local Govt" includes PERS covered employees (not TRS members).				** Teachers' Retirement System: State of Montana - ACTUARIAL VALUATION (As of July 1, 2006)				** Teachers' Retirement System: State of Montana - ACTUARIAL VALUATION (As of July 1, 2006)				** Comprehensive Annual Financial Reports: Teachers' Retirement System, Fiscal Years ended: June 30, 2006. Table 8, p. 60, and June 30, 2005, Table 10.				higher cost over 30 yrs				
See Tables 0, 1, 0, 2, and 0,3	See Tables 0, 1, 0, 2, and 0,3				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				
higher cost over 30 yrs	higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				
In \$ million	In \$ million				In \$ million				In \$ million				In \$ million				In \$ million				
Change	Change				Change				Change				Change				Change				
1 basis point incr. in PERS ER	\$ 5,206				\$ 0.208				\$ 0.208				\$ 0.195				\$ 0.208				
1 basis point incr. in TRS ER	\$ 3,422				\$ 0.132				\$ 0.132				\$ 0.132				\$ 0.132				
1 basis point inc. in PERS bond %	\$ 0.594				\$ 0.616				\$ 0.616				\$ 0.616				\$ 0.616				
1 basis point inc. in TRS bond %	\$ 0.982				\$ 0.916				\$ 0.916				\$ 0.916				\$ 0.916				
\$1 million incr. in PERS bond prn.	\$ 1,988				\$ 2,158				\$ 2,158				\$ 2,158				\$ 2,158				
\$1 million incr. in TRS bond prn.	\$ 1,988				\$ 2,158				\$ 2,158				\$ 2,158				\$ 2,158				
higher cost over 30 yrs	higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				
In \$ million	In \$ million				in \$ million				in \$ million				in \$ million				in \$ million				
Change	Change				Change				Change				Change				Change				
1 basis point incr. in PERS ER	\$ 5,206				\$ 0.208				\$ 0.208				\$ 0.195				\$ 0.208				
1 basis point incr. in TRS ER	\$ 3,422				\$ 0.132				\$ 0.132				\$ 0.132				\$ 0.132				
1 basis point inc. in PERS bond %	\$ 0.594				\$ 0.616				\$ 0.616				\$ 0.616				\$ 0.616				
1 basis point inc. in TRS bond %	\$ 0.982				\$ 0.916				\$ 0.916				\$ 0.916				\$ 0.916				
\$1 million incr. in PERS bond prn.	\$ 1,988				\$ 2,158				\$ 2,158				\$ 2,158				\$ 2,158				
\$1 million incr. in TRS bond prn.	\$ 1,988				\$ 2,158				\$ 2,158				\$ 2,158				\$ 2,158				
higher cost over 30 yrs	higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				higher cost over 30 yrs				
In \$ million	In \$ million				in \$ million				in \$ million				in \$ million				in \$ million				
Change	Change				Change				Change				Change				Change				
1 basis point incr. in PERS ER	\$ 5,206				\$ 0.208				\$ 0.208				\$ 0.195				\$ 0.208				
1 basis point incr. in TRS ER	\$ 3,422				\$ 0.132				\$ 0.132				\$ 0.132				\$ 0.132				
1 basis point inc. in PERS bond %	\$ 0.594				\$ 0.616				\$ 0.616				\$ 0.616				\$ 0.616				
1 basis point inc. in TRS bond %	\$ 0.982																				

Table 0.1
PERS
Estimates of contribution rate increases and pension bonds

Draft - Subject to change - Discussion purposes only

Assumptions:	Single rate increase 7/1/2006 @			actuary est Additional Employer Contributions	debt service	Difference	Total 30 year Debt Service Contributions @ 5.25%	Taxpayer Savings by Bonding
	1.63%	5.25%	Monthly payment					
PERS			\$266,400,000	\$1,471,071				
All covered payroll subject to rate increase								
FYE	Central Payroll	Univ	Local Gov't	Total				
30-Jun-2006	\$418,380,812	\$90,831,318	\$434,664,701	\$943,876,831	\$15,385,192.35	\$17,652,852.00	\$2,267,659.65)	
30-Jun-2007	\$434,697,664	\$94,373,739	\$451,616,624	\$980,688,027	\$15,985,214.84	\$17,652,852.00	(\$1,667,637.16)	\$848,604,119
30-Jun-2008	\$451,650,873	\$98,054,315	\$469,229,672	\$1,018,934,860	\$16,608,638.22	\$17,652,852.00	(\$1,044,213.78)	
30-Jun-2009	\$469,265,257	\$101,878,433	\$487,529,630	\$1,058,673,320	\$17,256,375.12	\$17,652,852.00	(\$396,476.88)	
30-Jun-2010	\$487,566,602	\$105,851,692	\$506,543,285	\$1,099,961,579	\$17,929,373.74	\$17,652,852.00	\$276,521.74	
30-Jun-2011	\$506,581,699	\$109,979,908	\$526,298,473	\$1,142,860,080	\$18,628,619.30	\$17,652,852.00	\$975,767.30	
30-Jun-2012	\$526,338,385	\$114,269,124	\$546,824,114	\$1,187,431,623	\$19,355,135.45	\$17,652,852.00	\$1,702,283.45	
30-Jun-2013	\$546,865,582	\$118,725,620	\$568,150,254	\$1,233,741,456	\$20,109,985.73	\$17,652,852.00	\$2,457,133.73	
30-Jun-2014	\$568,193,340	\$123,355,920	\$590,308,114	\$1,281,857,374	\$20,894,275.20	\$17,652,852.00	\$3,241,423.20	
30-Jun-2015	\$590,352,880	\$128,166,800	\$613,330,130	\$1,331,849,810	\$21,709,151.90	\$17,652,852.00	\$4,056,299.90	
30-Jun-2016	\$613,376,643	\$133,165,306	\$637,250,006	\$1,383,791,955	\$22,555,808.87	\$17,652,852.00	\$4,902,956.87	
30-Jun-2017	\$637,298,332	\$138,358,753	\$662,102,756	\$1,437,759,841	\$23,435,485.41	\$17,652,852.00	\$5,782,633.41	
30-Jun-2018	\$662,152,967	\$143,754,744	\$687,924,763	\$1,493,832,474	\$24,349,469.33	\$17,652,852.00	\$6,696,617.33	
30-Jun-2019	\$687,976,932	\$149,361,179	\$714,753,829	\$1,552,091,940	\$25,299,098.62	\$17,652,852.00	\$7,646,246.62	
30-Jun-2020	\$714,808,033	\$155,186,265	\$742,629,228	\$1,612,623,526	\$26,285,763.47	\$17,652,852.00	\$8,632,911.47	
30-Jun-2021	\$742,685,546	\$161,238,529	\$771,591,768	\$1,675,515,843	\$27,310,908.24	\$17,652,852.00	\$9,658,056.24	
30-Jun-2022	\$771,650,282	\$167,526,832	\$801,683,847	\$1,740,860,961	\$28,376,033.66	\$17,652,852.00	\$10,723,181.66	
30-Jun-2023	\$801,744,643	\$174,060,378	\$832,949,517	\$1,808,754,538	\$29,482,698.97	\$17,652,852.00	\$11,829,846.97	
30-Jun-2024	\$833,012,684	\$180,848,733	\$865,434,548	\$1,879,295,965	\$30,632,524.23	\$17,652,852.00	\$12,979,672.23	
30-Jun-2025	\$865,500,179	\$187,901,834	\$899,186,496	\$1,952,588,509	\$31,827,192.70	\$17,652,852.00	\$14,174,340.70	
30-Jun-2026	\$899,254,686	\$195,230,005	\$934,254,769	\$2,028,739,460	\$33,068,453.20	\$17,652,852.00	\$15,415,601.20	
30-Jun-2027	\$934,325,619	\$202,843,975	\$970,690,705	\$2,107,860,299	\$34,358,122.87	\$17,652,852.00	\$16,705,270.87	
30-Jun-2028	\$970,764,318	\$210,754,890	\$1,131,209,546	\$2,190,066,851	\$35,698,089.67	\$17,652,852.00	\$18,045,237.67	
30-Jun-2029	\$1,008,624,126	\$218,974,331	\$1,047,881,001	\$2,275,479,458	\$37,090,315.17	\$17,652,852.00	\$19,437,463.17	
30-Jun-2030	\$1,047,960,467	\$227,514,330	\$1,088,748,360	\$2,364,223,157	\$38,536,837.46	\$17,652,852.00	\$20,883,985.46	
30-Jun-2031	\$1,088,830,925	\$236,387,389	\$1,131,209,546	\$2,456,427,860	\$40,039,774.12	\$17,652,852.00	\$22,386,922.12	
30-Jun-2032	\$1,131,295,332	\$245,606,497	\$1,175,326,718	\$2,552,228,547	\$41,601,325.32	\$17,652,852.00	\$23,948,473.32	
30-Jun-2033	\$1,175,415,849	\$255,185,150	\$1,221,164,460	\$2,651,765,459	\$43,223,776.98	\$17,652,852.00	\$25,570,924.98	
30-Jun-2034	\$1,221,257,068	\$265,137,371	\$1,268,789,874	\$2,755,184,313	\$44,909,504.30	\$17,652,852.00	\$27,256,652.30	
30-Jun-2035	\$1,268,886,093	\$275,477,729	\$1,318,272,679	\$2,862,636,501	\$46,660,974.97	\$17,652,852.00	\$29,008,122.97	
					\$848,604.19		\$319,018,559.40	

Source: Jim Gillett, Deputy Legislative Auditor, Legislative Audit Division, Dec. 2005.

Table 0.2
TRS

Estimates of contribution rate increases and pension bonds

Draft - Subject to change - Discussion purposes only

Assumptions: Single non-MUS rate increase 7/1/2006 @

Single MUS rate increase 7/1/2006 @

Taxable bonds @

Bond principal

Monthly payment

MUS contributions end 6/30/2033

All covered payroll subject to rate increase

MUS

Total

FYE	non-MUS		4.06% actuary est	1.47% Additional Employer Contributions	5.25% Bonding	debt service	Difference	Total 30 year Additional Employer Contributions	Total 30 year Debt Service @ 5.25%	Taxpayer Savings by Bonding
30-Jun-2006	\$560,955,198	\$41,350,437	\$602,305,635			23,382,632	29,176,236	(5,793,604)		
30-Jun-2007	\$586,198,182	\$38,743,885	\$624,942,067			24,369,181	29,176,236	(4,807,055)	\$1,395,015,131	\$875,287,080
30-Jun-2008	\$612,577,100	\$35,890,074	\$648,467,174			25,398,214	29,176,236	(3,778,022)		
30-Jun-2009	\$640,143,070	\$33,158,646	\$673,301,716			26,477,241	29,176,236	(2,698,995)		
30-Jun-2010	\$668,949,508	\$30,361,724	\$699,311,232			27,605,667	29,176,236	(1,570,569)		
30-Jun-2011	\$699,052,236	\$27,479,238	\$726,531,474			28,785,466	29,176,236	(390,770)		
30-Jun-2012	\$730,509,586	\$24,851,205	\$755,360,791			30,024,002	29,176,236	847,766		
30-Jun-2013	\$763,382,518	\$22,127,790	\$785,510,308			31,318,609	29,176,236	2,142,373		
30-Jun-2014	\$797,734,731	\$19,623,170	\$817,357,901			32,676,491	29,176,236	3,500,255		
30-Jun-2015	\$833,632,794	\$17,257,801	\$850,890,595			34,099,181	29,176,236	4,922,945		
30-Jun-2016	\$871,146,270	\$15,072,626	\$886,218,896			35,590,106	29,176,236	6,413,870		
30-Jun-2017	\$910,347,852	\$13,028,623	\$923,376,475			37,151,644	29,176,236	7,975,408		
30-Jun-2018	\$951,313,505	\$11,012,210	\$962,325,715			38,785,208	29,176,236	9,608,972		
30-Jun-2019	\$994,122,613	\$9,282,627	\$1,003,405,240			40,497,833	29,176,236	11,321,597		
30-Jun-2020	\$1,038,858,130	\$7,744,407	\$1,046,602,537			42,291,483	29,176,236	13,115,247		
30-Jun-2021	\$1,085,606,746	\$6,460,927	\$1,092,067,673			44,170,610	29,176,236	14,994,374		
30-Jun-2022	\$1,134,459,050	\$5,414,886	\$1,139,873,936			46,138,636	29,176,236	16,962,400		
30-Jun-2023	\$1,185,509,707	\$4,448,153	\$1,189,957,860			48,197,082	29,176,236	19,020,846		
30-Jun-2024	\$1,238,857,644	\$3,654,129	\$1,242,511,773			50,351,336	29,176,236	21,175,100		
30-Jun-2025	\$1,294,606,238	\$3,001,404	\$1,297,607,642			52,605,134	29,176,236	23,428,898		
30-Jun-2026	\$1,352,863,519	\$2,384,225	\$1,355,247,744			54,961,307	29,176,236	25,785,071		
30-Jun-2027	\$1,413,742,377	\$1,931,294	\$1,415,673,671			57,426,331	29,176,236	28,250,095		
30-Jun-2028	\$1,477,360,784	\$1,498,867	\$1,478,859,651			60,002,881	29,176,236	30,826,645		
30-Jun-2029	\$1,543,842,019	\$1,221,484	\$1,545,063,503			62,697,942	29,176,236	33,521,706		
30-Jun-2030	\$1,613,314,910	\$979,400	\$1,614,294,310			65,514,983	29,176,236	36,338,747		
30-Jun-2031	\$1,685,914,081	\$748,285	\$1,686,662,366			68,459,111	29,176,236	39,282,875		
30-Jun-2032	\$1,761,780,215	\$603,262	\$1,762,383,477			71,537,145	29,176,236	42,360,909		
30-Jun-2033	\$1,841,060,324	\$486,237	\$1,841,546,561			74,754,197	29,176,236	45,577,961		
30-Jun-2034	\$1,923,908,039	\$360,973	\$1,924,269,012			78,115,973	29,176,236	48,939,737		
30-Jun-2035	\$2,010,483,901	\$262,682	\$2,010,746,583			81,629,508	29,176,236	52,453,272		
						\$1,395,015,131	\$875,287,080	\$19,728,051		

Source: Jim Gillett, Deputy Legislative Auditor, Legislative Audit Division, Dec. 2005.

Table 0.3
Estimates of contribution rate increases and pension bonds
PERS & TRS Combined

Draft - Subject to change - Discussion purposes only

PERS	Assumptions:	Single rate increase 7/1/2006 @ Taxable bonds @ Bond principal Monthly payment	1.62% 5.25% \$266,400,000 \$1,471,071
		All covered payroll subject to rate increase	

FYE	Central Payroll	Univ	Total	Local Gov't	\$0.00
30-Jun-2006	\$979,336,010	\$132,181,755	\$1,036,970,336	\$943,876,831	\$46,829,088
30-Jun-2007	\$1,020,895,846	\$133,117,624	\$1,076,558,691	\$980,688,027	(\$8,061,263)
30-Jun-2008	\$1,064,227,973	\$133,944,389	\$1,117,696,846	\$1,018,934,860	\$46,829,088
30-Jun-2009	\$1,109,408,327	\$135,037,079	\$1,160,831,346	\$1,058,673,320	\$42,006,853
30-Jun-2010	\$1,156,516,110	\$136,213,416	\$1,205,854,517	\$1,099,961,579	\$46,829,088
30-Jun-2011	\$1,205,633,935	\$137,459,146	\$1,252,829,947	\$1,142,860,080	\$45,535,041
30-Jun-2012	\$1,256,847,971	\$139,120,329	\$1,302,184,905	\$1,187,431,623	\$47,141,085
30-Jun-2013	\$1,310,248,100	\$140,853,410	\$1,353,660,562	\$1,233,741,456	\$46,829,088
30-Jun-2014	\$1,365,928,071	\$142,979,090	\$1,407,666,015	\$1,281,857,374	\$53,570,766
30-Jun-2015	\$1,423,985,674	\$145,424,601	\$1,464,220,725	\$1,331,849,810	\$46,829,088
30-Jun-2016	\$1,484,522,913	\$148,237,932	\$1,523,468,902	\$1,383,791,955	\$58,145,915
30-Jun-2017	\$1,547,646,184	\$151,387,376	\$1,585,479,231	\$1,437,759,841	\$60,587,129
30-Jun-2018	\$1,613,466,472	\$154,766,954	\$1,650,250,478	\$1,493,832,474	\$63,134,677
30-Jun-2019	\$1,682,099,545	\$158,643,806	\$1,718,159,069	\$1,552,091,940	\$65,796,931
30-Jun-2020	\$1,753,666,163	\$162,930,672	\$1,789,231,765	\$1,612,623,526	\$68,577,246
30-Jun-2021	\$1,828,292,292	\$167,699,456	\$1,863,659,441	\$1,675,515,843	\$71,481,518
30-Jun-2022	\$1,906,109,332	\$172,941,718	\$1,941,557,783	\$1,740,860,961	\$74,514,670
30-Jun-2023	\$1,987,254,350	\$178,508,531	\$2,022,907,377	\$1,808,754,538	\$77,679,781
30-Jun-2024	\$2,071,870,328	\$184,502,862	\$2,107,946,321	\$1,879,295,965	\$80,983,860
30-Jun-2025	\$2,160,106,417	\$190,903,238	\$2,196,794,138	\$1,952,588,509	\$84,432,327
30-Jun-2026	\$2,252,118,205	\$197,614,230	\$2,289,502,513	\$2,028,739,460	\$88,029,760
30-Jun-2027	\$2,348,067,996	\$204,775,269	\$2,386,364,376	\$2,107,860,299	\$91,784,453
30-Jun-2028	\$2,448,125,102	\$212,253,757	\$2,487,407,294	\$2,190,066,851	\$95,700,971
30-Jun-2029	\$2,552,466,145	\$220,195,815	\$2,592,944,504	\$2,275,479,458	\$99,788,257
30-Jun-2030	\$2,661,275,377	\$228,493,730	\$2,703,042,670	\$2,364,223,157	\$104,051,820
30-Jun-2031	\$2,774,745,006	\$237,135,674	\$2,817,871,912	\$2,456,427,860	\$108,498,886
30-Jun-2032	\$2,893,075,547	\$246,209,759	\$2,937,710,195	\$2,552,228,547	\$113,138,470
30-Jun-2033	\$3,016,476,173	\$255,671,387	\$3,062,711,021	\$2,651,765,459	\$117,977,974
30-Jun-2034	\$3,145,165,107	\$265,498,344	\$3,193,058,886	\$2,755,184,313	\$123,025,477
30-Jun-2035	\$3,279,369,994	\$275,740,411	\$3,329,019,262	\$2,862,636,501	\$128,290,483

Source: Jim Gillett, Deputy Legislative Auditor, Legislative Audit Division, Dec. 2005.

Table 1.1
Estimates of contribution rate increases and pension bonds
PERS

ASSUMPTIONS	
Supplemental rate 7/1/2007 @	0.56%
Supplemental rate 7/1/2009 @	1.13%
30-yr. taxable bonds @	6.00%
Bond principal	\$266,000,000
Monthly payment	\$1,594,804
Annual payment	\$19,137,653

Fiscal Year End	State*	Covered Payroll MUS*	Estimated Additional Contributions			Cumulative Bond Service	Annual Difference
			State	MUS	Local Gov't		
29	06/30/08	\$451,650,873	\$98,054,315	\$469,229,672	\$549,104	\$2,627,686	\$5,706,035
28	06/30/09	\$469,265,257	\$101,878,433	\$487,529,630	\$570,519	\$2,730,166	\$5,928,571
27	06/30/10	\$487,566,602	\$105,851,692	\$506,543,285	\$5,509,503	\$1,196,124	\$12,429,566
26	06/30/11	\$506,581,699	\$109,977,908	\$526,298,473	\$5,724,373	\$1,242,773	\$5,947,173
25	06/30/12	\$526,338,385	\$114,269,124	\$546,824,114	\$5,947,624	\$1,291,241	\$6,179,112
24	06/30/13	\$546,865,582	\$118,725,620	\$568,150,254	\$6,179,581	\$1,341,600	\$6,420,098
23	06/30/14	\$568,193,340	\$123,355,920	\$590,308,114	\$6,420,585	\$1,393,922	\$6,670,482
22	06/30/15	\$580,352,800	\$128,166,800	\$613,330,130	\$6,670,988	\$1,448,285	\$6,930,630
21	06/30/16	\$613,376,643	\$133,165,306	\$637,250,006	\$6,931,156	\$1,504,768	\$7,200,925
20	06/30/17	\$637,298,332	\$138,358,753	\$662,102,756	\$7,201,471	\$1,563,454	\$7,481,761
19	06/30/18	\$662,152,967	\$143,754,744	\$687,924,763	\$7,482,329	\$1,624,429	\$7,773,550
18	06/30/19	\$687,976,932	\$149,361,179	\$714,753,829	\$7,774,139	\$1,687,781	\$8,076,718
17	06/30/20	\$714,808,033	\$155,186,265	\$742,629,228	\$8,077,331	\$1,753,605	\$8,391,710
16	06/30/21	\$742,685,546	\$161,238,529	\$771,591,768	\$8,392,347	\$1,821,995	\$8,718,987
15	06/30/22	\$771,650,282	\$167,526,832	\$801,683,847	\$8,719,648	\$1,893,053	\$9,059,027
14	06/30/23	\$801,744,643	\$174,061,378	\$832,949,517	\$9,059,714	\$1,966,882	\$9,412,330
13	06/30/24	\$833,012,684	\$180,848,733	\$865,434,548	\$9,413,043	\$2,043,591	\$9,779,410
12	06/30/25	\$865,500,179	\$187,901,834	\$899,186,496	\$9,780,152	\$2,123,291	\$10,160,807
11	06/30/26	\$889,254,686	\$195,230,005	\$934,254,769	\$10,161,578	\$2,206,099	\$10,557,079
10	06/30/27	\$934,325,619	\$202,843,975	\$970,690,705	\$10,557,879	\$2,292,137	\$10,968,805
9	06/30/28	\$970,764,318	\$210,754,890	\$1,008,547,643	\$10,969,637	\$2,381,530	\$11,396,588
8	06/30/29	\$1,008,624,126	\$218,974,331	\$1,047,881,001	\$11,397,453	\$2,474,410	\$11,841,055
7	06/30/30	\$1,047,960,467	\$227,514,330	\$1,088,748,360	\$11,841,953	\$2,570,912	\$12,302,856
6	06/30/31	\$1,088,830,925	\$236,387,389	\$1,131,209,546	\$12,303,789	\$2,671,177	\$12,782,668
5	06/30/32	\$1,131,295,332	\$245,606,497	\$1,175,326,718	\$12,783,637	\$2,775,353	\$13,281,192
4	06/30/33	\$1,175,415,849	\$255,185,150	\$1,221,164,460	\$13,282,199	\$2,883,592	\$13,799,158
3	06/30/34	\$1,221,257,068	\$265,137,371	\$1,268,789,874	\$13,800,205	\$2,996,052	\$14,337,326
2	06/30/35	\$1,268,886,093	\$275,477,729	\$1,318,272,679	\$14,338,413	\$3,112,898	\$14,896,481
1	06/30/36	\$1,318,372,649	\$286,221,360	\$1,369,685,313	\$14,897,611	\$3,234,301	\$15,477,444
0	06/30/37	\$1,369,789,182	\$297,383,994	\$1,423,103,040	\$15,478,618	\$3,360,439	\$16,081,064

* Data from Legislative Audit Division staff (Dec. 2005)

Fiscal Year End	State*	Covered Payroll MUS*	Estimated Additional Contributions			Cumulative Bond Service	Annual Difference
			State	MUS	Local Gov't		
29	06/30/08	\$451,650,873	\$98,054,315	\$469,229,672	\$549,104	\$2,627,686	\$5,706,035
28	06/30/09	\$469,265,257	\$101,878,433	\$487,529,630	\$570,519	\$2,730,166	\$5,928,571
27	06/30/10	\$487,566,602	\$105,851,692	\$506,543,285	\$5,509,503	\$1,196,124	\$24,064,172
26	06/30/11	\$506,581,699	\$109,977,908	\$526,298,473	\$5,724,373	\$1,242,773	\$36,978,491
25	06/30/12	\$526,338,385	\$114,269,124	\$546,824,114	\$5,947,624	\$1,291,241	\$50,396,468
24	06/30/13	\$546,865,582	\$118,725,620	\$568,150,254	\$6,179,581	\$1,341,600	\$6,420,098
23	06/30/14	\$568,193,340	\$123,355,920	\$590,308,114	\$6,420,585	\$1,393,922	\$6,670,482
22	06/30/15	\$580,352,800	\$128,166,800	\$613,330,130	\$6,670,988	\$1,448,285	\$6,930,630
21	06/30/16	\$613,376,643	\$133,165,306	\$637,250,006	\$6,931,156	\$1,504,768	\$7,200,925
20	06/30/17	\$637,298,332	\$138,358,753	\$662,102,756	\$7,201,471	\$1,563,454	\$7,481,761
19	06/30/18	\$662,152,967	\$143,754,744	\$687,924,763	\$7,482,329	\$1,624,429	\$7,773,550
18	06/30/19	\$687,976,932	\$149,361,179	\$714,753,829	\$7,774,139	\$1,687,781	\$8,076,718
17	06/30/20	\$714,808,033	\$155,186,265	\$742,629,228	\$8,077,331	\$1,753,605	\$8,391,710
16	06/30/21	\$742,685,546	\$161,238,529	\$771,591,768	\$8,392,347	\$1,821,995	\$8,718,987
15	06/30/22	\$771,650,282	\$167,526,832	\$801,683,847	\$8,719,648	\$1,893,053	\$9,059,027
14	06/30/23	\$801,744,643	\$174,061,378	\$832,949,517	\$9,059,714	\$1,966,882	\$9,412,330
13	06/30/24	\$833,012,684	\$180,848,733	\$865,434,548	\$9,413,043	\$2,043,591	\$9,779,410
12	06/30/25	\$865,500,179	\$187,901,834	\$899,186,496	\$9,780,152	\$2,123,291	\$10,160,807
11	06/30/26	\$889,254,686	\$195,230,005	\$934,254,769	\$10,161,578	\$2,206,099	\$10,557,079
10	06/30/27	\$934,325,619	\$202,843,975	\$970,690,705	\$10,557,879	\$2,292,137	\$10,968,805
9	06/30/28	\$970,764,318	\$210,754,890	\$1,008,547,643	\$10,969,637	\$2,381,530	\$11,396,588
8	06/30/29	\$1,008,624,126	\$218,974,331	\$1,047,881,001	\$11,397,453	\$2,474,410	\$11,841,055
7	06/30/30	\$1,047,960,467	\$227,514,330	\$1,088,748,360	\$11,841,953	\$2,570,912	\$12,302,856
6	06/30/31	\$1,088,830,925	\$236,387,389	\$1,131,209,546	\$12,303,789	\$2,671,177	\$12,782,668
5	06/30/32	\$1,131,295,332	\$245,606,497	\$1,175,326,718	\$12,783,637	\$2,775,353	\$13,281,192
4	06/30/33	\$1,175,415,849	\$255,185,150	\$1,221,164,460	\$13,282,199	\$2,883,592	\$13,799,158
3	06/30/34	\$1,221,257,068	\$265,137,371	\$1,268,789,874	\$13,800,205	\$2,996,052	\$14,337,326
2	06/30/35	\$1,268,886,093	\$275,477,729	\$1,318,272,679	\$14,338,413	\$3,112,898	\$14,896,481
1	06/30/36	\$1,318,372,649	\$286,221,360	\$1,369,685,313	\$14,897,611	\$3,234,301	\$15,477,444
0	06/30/37	\$1,369,789,182	\$297,383,994	\$1,423,103,040	\$15,478,618	\$3,360,439	\$16,081,064

\$ 623,235,635

\$ 574,129,583

\$ 49,106,052

\$ 49,106,052

Table 1.2
Estimates of contribution rate increases and pension bonds
TRS

ASSUMPTIONS	
Supplemental rate 7/1/2007 @	2.00%
Supplemental rate 7/1/2009 @	2.38%
30-yr. taxable bonds @	6.00%
Bond principal	\$395,500,000
Monthly payment	\$2,371,222
Annual payment	\$28,454,668

Fiscal Year End	Covered Payroll State*	Estimated Additional Contributions			Bond Service	Annual Difference	Cumulative Difference
		MUS*	State	MUS			
29 June 30, 2008	\$610,866,521	\$35,890,074	\$ 12,217,330	\$ 717,801	\$ 12,935,132	\$ 28,454,668	\$ (15,519,536)
28 June 30, 2009	\$638,355,514	\$33,158,646	\$ 12,767,110	\$ 663,173	\$ 13,430,283	\$ 28,454,668	\$ (30,543,921)
27 June 30, 2010	\$667,081,513	\$30,361,724	\$ 15,876,540	\$ 722,609	\$ 16,599,149	\$ 28,454,668	\$ (42,399,440)
26 June 30, 2011	\$697,100,181	\$27,479,238	\$ 16,590,984	\$ 654,006	\$ 17,244,990	\$ 28,454,668	\$ (53,609,117)
25 June 30, 2012	\$728,469,689	\$24,851,205	\$ 17,337,579	\$ 591,459	\$ 17,929,037	\$ 28,454,668	\$ (64,134,748)
24 June 30, 2013	\$761,250,825	\$22,127,790	\$ 18,117,770	\$ 526,641	\$ 18,644,411	\$ 28,454,668	\$ (73,945,005)
23 June 30, 2014	\$795,507,112	\$19,623,170	\$ 18,933,069	\$ 467,031	\$ 19,400,101	\$ 28,454,668	\$ (82,999,572)
22 June 30, 2015	\$831,304,932	\$17,257,801	\$ 19,785,057	\$ 410,736	\$ 20,195,793	\$ 28,454,668	\$ (91,258,447)
21 June 30, 2016	\$868,713,654	\$15,072,626	\$ 20,675,385	\$ 358,728	\$ 21,034,113	\$ 28,454,668	\$ (98,679,001)
20 June 30, 2017	\$907,805,768	\$13,028,623	\$ 21,605,777	\$ 310,081	\$ 21,915,859	\$ 28,454,668	\$ (105,217,811)
19 June 30, 2018	\$948,657,028	\$11,012,210	\$ 22,578,037	\$ 262,091	\$ 22,840,128	\$ 28,454,668	\$ (110,832,351)
18 June 30, 2019	\$991,346,594	\$9,282,627	\$ 23,594,049	\$ 220,927	\$ 23,814,975	\$ 28,454,668	\$ (115,472,043)
17 June 30, 2020	\$1,035,957,191	\$7,744,407	\$ 24,655,781	\$ 184,317	\$ 24,840,098	\$ 28,454,668	\$ (3,614,570)
16 June 30, 2021	\$1,082,575,264	\$6,460,927	\$ 25,765,291	\$ 153,770	\$ 25,919,061	\$ 28,454,668	\$ (2,535,607)
15 June 30, 2022	\$1,131,291,151	\$5,414,886	\$ 26,924,729	\$ 128,874	\$ 27,053,604	\$ 28,454,668	\$ (1,401,064)
14 June 30, 2023	\$1,182,199,253	\$4,448,153	\$ 28,136,342	\$ 105,866	\$ 28,242,208	\$ 28,454,668	\$ (212,460)
13 June 30, 2024	\$1,235,398,219	\$3,654,129	\$ 29,402,473	\$ 86,968	\$ 29,489,446	\$ 28,454,668	\$ 1,034,778
12 June 30, 2025	\$1,290,991,139	\$3,001,404	\$ 30,725,589	\$ 71,433	\$ 30,797,023	\$ 28,454,668	\$ 2,342,355
11 June 30, 2026	\$1,349,085,741	\$2,384,225	\$ 32,108,241	\$ 56,745	\$ 32,164,985	\$ 28,454,668	\$ 3,710,317
10 June 30, 2027	\$1,409,794,599	\$1,931,294	\$ 33,553,111	\$ 45,965	\$ 33,599,076	\$ 28,454,668	\$ 5,144,408
9 June 30, 2028	\$1,473,235,356	\$1,498,867	\$ 35,063,001	\$ 35,673	\$ 35,098,675	\$ 28,454,668	\$ 6,644,007
8 June 30, 2029	\$1,539,530,947	\$1,221,484	\$ 36,640,837	\$ 29,071	\$ 36,669,908	\$ 28,454,668	\$ 8,215,240
7 June 30, 2030	\$1,608,809,839	\$979,400	\$ 38,289,674	\$ 23,310	\$ 38,312,984	\$ 28,454,668	\$ 9,858,316
6 June 30, 2031	\$1,681,206,282	\$748,285	\$ 40,012,710	\$ 17,809	\$ 40,030,519	\$ 28,454,668	\$ 11,575,851
5 June 30, 2032	\$1,756,860,565	\$603,262	\$ 41,813,281	\$ 14,358	\$ 41,827,639	\$ 28,454,668	\$ 13,372,971
4 June 30, 2033	\$1,835,919,290	\$486,237	\$ 43,694,879	\$ 11,572	\$ 43,706,452	\$ 28,454,668	\$ 15,251,784
3 June 30, 2034	\$1,918,535,658	\$360,973	\$ 45,661,149	\$ 8,591	\$ 45,669,740	\$ 28,454,668	\$ 17,215,072
2 June 30, 2035	\$2,004,869,763	\$262,682	\$ 47,715,900	\$ 6,252	\$ 47,722,152	\$ 28,454,668	\$ 19,267,484
1 June 30, 2036	\$2,095,088,902	\$191,155	\$ 49,863,116	\$ 4,549	\$ 49,867,665	\$ 28,454,668	\$ 21,412,997
0 June 30, 2037	\$2,189,367,902	\$139,104	\$ 52,106,956	\$ 3,311	\$ 52,110,267	\$ 28,454,668	\$ 23,655,599
						\$ 889,105,473	\$ 35,465,435

* Teachers' Retirement System: State of Montana - ACTUARIAL VALUATION (As of July 1, 2006)

Table 1.3
Estimates of contribution rate increases and pension bonds
PERS & TRS COMBINED

PERS ASSUMPTIONS		
Supplemental rate 7/1/2007 @	0.56%	2.00%
Supplemental rate 7/1/2009 @	1.13%	2.38%
30-yr. taxable bonds @	6.00%	6.00%
Bond principal	\$266,000,000	\$395,500,000
Monthly payment	\$1,594,804	\$2,371,222
Annual payment	\$19,137,653	\$28,454,668

PERS and TRS Combined		
Covered Payroll	MUS*	Local Gov't**
\$1,062,517,394	\$133,944,389	\$14,746,575
\$1,107,620,771	\$135,037,079	\$15,394,996
\$1,154,648,115	\$136,223,416	\$21,386,043
\$1,203,681,880	\$137,459,146	\$506,543,285
\$1,254,808,074	\$139,329	\$22,315,358
\$1,308,116,407	\$140,853,410	\$546,824,114
\$1,363,700,452	\$142,979,090	\$568,150,254
\$1,421,657,812	\$145,424,601	\$590,308,114
\$1,482,090,297	\$148,237,932	\$613,330,130
\$1,545,104,100	\$151,387,376	\$637,250,016
\$1,610,809,995	\$154,766,954	\$662,102,756
\$1,679,323,526	\$158,643,806	\$687,924,763
\$1,750,765,224	\$162,930,672	\$714,753,829
\$1,825,260,810	\$167,899,456	\$742,629,228
\$1,902,941,433	\$172,941,718	\$771,591,768
\$1,983,943,896	\$178,508,531	\$801,683,847
\$2,068,410,903	\$184,020,862	\$832,949,517
\$2,146,491,318	\$190,903,238	\$889,186,496
\$2,248,340,427	\$197,614,230	\$934,254,759
\$2,344,120,218	\$204,775,269	\$970,690,705
\$2,443,999,674	\$212,253,757	\$1,008,547,643
\$2,548,155,073	\$220,95,815	\$1,047,881,001
\$2,656,770,306	\$228,493,730	\$1,088,748,360
\$2,770,037,207	\$237,35,674	\$1,131,209,546
\$2,888,155,897	\$246,209,759	\$1,175,326,718
\$3,011,335,139	\$255,671,387	\$1,221,164,460
\$3,139,792,726	\$255,498,344	\$1,268,789,874
\$3,273,755,856	\$255,740,411	\$1,318,272,679
\$3,413,461,551	\$286,412,515	\$1,369,685,313
\$3,559,157,084	\$297,523,098	\$1,423,103,040

PERS ASSUMPTIONS		
Supplemental rate 7/1/2007 @	0.56%	2.00%
Supplemental rate 7/1/2009 @	1.13%	2.38%
30-yr. taxable bonds @	6.00%	6.00%
Bond principal	\$266,000,000	\$395,500,000
Monthly payment	\$1,594,804	\$2,371,222
Annual payment	\$19,137,653	\$28,454,668

PERS and TRS Combined		
Estimated Additional Contributions	MUS	Local Gov't
\$1,266,906	\$2,627,686	\$18,641,167
\$1,233,692	\$2,730,166	\$19,358,854
\$1,918,733	\$5,723,939	\$29,028,715
\$1,882,700	\$6,179,112	\$30,159,309
\$1,868,241	\$6,420,098	\$31,347,015
\$1,860,953	\$6,670,482	\$32,585,689
\$1,859,021	\$6,930,630	\$33,885,089
\$1,863,496	\$7,200,925	\$36,670,963
\$1,873,535	\$7,481,761	\$38,162,545
\$1,886,519	\$7,773,550	\$39,720,435
\$1,908,708	\$8,076,718	\$41,353,614
\$1,937,922	\$8,391,710	\$43,062,744
\$1,975,765	\$8,718,987	\$44,852,390
\$2,021,927	\$9,059,027	\$46,725,333
\$2,072,748	\$9,412,330	\$48,681,135
\$2,107,559	\$9,779,410	\$50,725,490
\$2,145,521	\$10,156,559	\$52,861,273
\$40,505,741	\$10,160,807	\$55,089,079
\$42,269,819	\$10,557,079	\$57,417,898
\$44,110,991	\$10,968,805	\$60,667,822
\$46,032,638	\$11,396,588	\$59,846,430
\$48,038,289	\$11,841,055	\$62,382,826
\$50,131,627	\$12,302,856	\$65,028,706
\$52,316,499	\$12,782,668	\$67,788,154
\$54,596,919	\$13,281,192	\$73,671,401
\$56,977,078	\$13,799,158	\$76,803,323
\$59,461,354	\$14,337,326	\$80,069,945
\$62,054,313	\$14,896,481	\$83,477,022
\$64,760,727	\$15,477,444	\$87,030,388
\$67,585,574	\$16,081,064	\$91,529,321
\$3,363,750	\$18,021,064	\$1,512,341,108

PERS and TRS Combined		
Estimated Additional Contributions	MUS	Local Gov't
\$1,266,906	\$2,627,686	\$18,641,167
\$1,233,692	\$2,730,166	\$19,358,854
\$1,918,733	\$5,723,939	\$29,028,715
\$1,882,700	\$6,179,112	\$30,159,309
\$1,868,241	\$6,420,098	\$31,347,015
\$1,860,953	\$6,670,482	\$32,585,689
\$1,859,021	\$6,930,630	\$33,885,089
\$1,863,496	\$7,200,925	\$36,670,963
\$1,873,535	\$7,481,761	\$38,162,545
\$1,886,519	\$7,773,550	\$39,720,435
\$1,908,708	\$8,076,718	\$41,353,614
\$1,937,922	\$8,391,710	\$43,062,744
\$1,975,765	\$8,718,987	\$44,852,390
\$2,021,927	\$9,059,027	\$46,725,333
\$2,072,748	\$9,412,330	\$48,681,135
\$2,107,559	\$9,779,410	\$50,725,490
\$2,145,521	\$10,156,559	\$52,861,273
\$40,505,741	\$10,160,807	\$55,089,079
\$42,269,819	\$10,557,079	\$57,417,898
\$44,110,991	\$10,968,805	\$60,667,822
\$46,032,638	\$11,396,588	\$59,846,430
\$48,038,289	\$11,841,055	\$62,382,826
\$50,131,627	\$12,302,856	\$65,028,706
\$52,316,499	\$12,782,668	\$67,788,154
\$54,596,919	\$13,281,192	\$73,671,401
\$56,977,078	\$13,799,158	\$76,803,323
\$59,461,354	\$14,337,326	\$80,069,945
\$62,054,313	\$14,896,481	\$83,477,022
\$64,760,727	\$15,477,444	\$87,030,388
\$67,585,574	\$16,081,064	\$91,529,321
\$3,363,750	\$18,021,064	\$1,512,341,108

* Data from Legislative Audit Division staff (Dec. 2005) and Teachers' Retirement System: State of Montana - ACTUARIAL VALUATION (As of July 1, 2006)

* Data from Legislative Audit Division staff (Dec. 2005)

\$ 84,571,487

PERS
Table 2.1
Estimates of contribution rate increases and pension bonds

ASSUMPTIONS			
Supplemental rate 7/1/2007 @	0.56%		
Supplemental rate 7/1/2009 @	1.13%		
30-yr. taxable bonds @	6.00%		
Payroll growth - annual	4.25%		
Bond principal	\$266,000,000		
Monthly payment	\$1,594,804		
Annual payment	\$ 19,137,653		

Fiscal Year End	Covered Payroll		Estimated Additional Contributions			Annual Difference	Cumulative Difference
	State*	MUS*	Local Gov't	MUS	Local Gov't	Total	
29 06/30/08	\$436,874,682	\$99,453,090	\$480,679,310	\$ 2,446,498	\$ 556,937	\$ 2,691,804	\$ 5,695,240
28 06/30/09	\$455,441,856	\$103,679,846	\$501,108,181	\$ 2,550,474	\$ 580,607	\$ 2,806,206	\$ 5,937,287
27 06/30/10	\$474,798,135	\$108,086,240	\$522,405,278	\$ 3,365,219	\$ 1,221,375	\$ 5,903,180	\$ 12,489,773
26 06/30/11	\$494,977,055	\$112,679,905	\$544,607,503	\$ 5,593,241	\$ 1,273,283	\$ 6,154,065	\$ 13,020,588
25 06/30/12	\$516,013,580	\$117,468,801	\$567,753,322	\$ 5,830,953	\$ 1,327,397	\$ 6,415,613	\$ 13,573,963
24 06/30/13	\$537,944,157	\$122,461,225	\$591,882,838	\$ 6,078,769	\$ 1,383,812	\$ 6,688,276	\$ 14,150,857
23 06/30/14	\$560,806,784	\$127,665,827	\$617,037,858	\$ 6,337,117	\$ 1,442,624	\$ 6,972,528	\$ 14,752,268
22 06/30/15	\$584,641,072	\$133,091,625	\$643,261,967	\$ 6,606,444	\$ 1,503,935	\$ 7,268,860	\$ 15,379,240
21 06/30/16	\$609,488,318	\$138,748,019	\$670,600,601	\$ 6,887,218	\$ 1,567,853	\$ 7,577,787	\$ 16,032,857
20 06/30/17	\$635,391,571	\$144,644,810	\$699,101,126	\$ 7,179,925	\$ 1,634,486	\$ 7,899,843	\$ 16,714,254
19 06/30/18	\$662,395,713	\$150,792,214	\$728,812,924	\$ 7,485,072	\$ 1,703,952	\$ 8,235,586	\$ 17,424,610
18 06/30/19	\$690,547,531	\$157,200,883	\$759,787,474	\$ 7,803,187	\$ 1,776,370	\$ 8,585,598	\$ 18,165,156
17 06/30/20	\$719,895,801	\$163,881,921	\$792,078,441	\$ 8,134,823	\$ 1,851,866	\$ 8,950,486	\$ 18,937,175
16 06/30/21	\$750,491,373	\$170,846,902	\$825,741,775	\$ 8,480,553	\$ 1,930,570	\$ 9,330,882	\$ 19,742,005
15 06/30/22	\$782,387,256	\$178,107,896	\$860,835,800	\$ 8,840,976	\$ 2,012,619	\$ 9,727,445	\$ 20,581,040
14 06/30/23	\$815,638,714	\$185,677,481	\$897,421,322	\$ 9,216,717	\$ 2,098,156	\$ 10,140,861	\$ 21,455,734
13 06/30/24	\$850,303,360	\$193,568,774	\$935,561,728	\$ 9,608,428	\$ 2,187,327	\$ 10,571,848	\$ 22,367,603
12 06/30/25	\$886,441,253	\$201,795,447	\$975,323,102	\$10,016,786	\$ 2,280,289	\$ 11,021,151	\$ 23,318,226
11 06/30/26	\$924,115,006	\$210,371,753	\$1,016,774,333	\$10,442,500	\$ 2,377,201	\$ 11,489,550	\$ 24,309,250
10 06/30/27	\$963,389,893	\$219,312,553	\$1,059,987,243	\$10,886,306	\$ 2,478,232	\$ 11,977,856	\$ 25,342,393
9 06/30/28	\$1,004,333,964	\$228,633,336	\$1,105,036,700	\$11,348,974	\$ 2,583,557	\$ 12,486,915	\$ 26,419,445
8 06/30/29	\$1,047,018,157	\$238,350,253	\$1,152,000,760	\$11,831,305	\$ 2,693,358	\$ 13,017,609	\$ 27,542,272
7 06/30/30	\$1,091,516,429	\$248,480,139	\$1,200,960,792	\$12,334,136	\$ 2,807,826	\$ 13,570,857	\$ 28,712,818
6 06/30/31	\$1,137,905,877	\$259,040,545	\$1,252,001,626	\$12,858,336	\$ 2,927,158	\$ 14,147,618	\$ 29,933,113
5 06/30/32	\$1,186,266,877	\$270,049,768	\$1,305,211,695	\$13,404,816	\$ 3,051,562	\$ 14,748,892	\$ 31,205,270
4 06/30/33	\$1,236,683,219	\$281,526,883	\$1,360,683,192	\$13,974,520	\$ 3,181,254	\$ 15,375,720	\$ 32,531,494
3 06/30/34	\$1,289,242,256	\$293,491,776	\$1,418,512,228	\$14,568,437	\$ 3,316,457	\$ 16,029,188	\$ 33,914,083
2 06/30/35	\$1,344,035,052	\$305,965,176	\$1,478,798,998	\$15,187,596	\$ 3,457,406	\$ 16,710,429	\$ 35,355,431
1 06/30/36	\$1,401,156,542	\$318,968,696	\$1,541,647,955	\$15,833,069	\$ 3,604,346	\$ 17,420,622	\$ 36,858,037
0 06/30/37	\$1,460,705,695	\$332,524,866	\$1,607,167,993	\$16,505,974	\$ 3,757,531	\$ 18,160,998	\$ 38,424,504
							\$ 660,285,986
							\$ 574,129,583
							\$ 86,156,403

* Data from fiscal note for HB 159, assumption # 5. Payroll growth of 4.25% annually. "Local Gov't" includes PERS covered employees (not TRS members).

Table 2.2
Estimates of contribution rate increases and pension bonds
TRS

ASSUMPTIONS		
Supplemental rate 7/1/2007 @	2.00%	
Supplemental rate 7/1/2009 @	2.38%	
30-yr. taxable bonds @	6.00%	
Bond principal	\$395,500,000	
Monthly payment	\$2,371,222	
Annual payment	\$ 28,454,668	

Fiscal Year End	Covered Payroll	State*	Estimated Additional Contributions			POB	Debt Service	Annual Difference	Cumulative Difference
			MUS*	MUS	Total				
29 June 30, 2008	\$610,866,521	\$35,890,074	\$ 12,217,330	\$ 717,801	\$ 12,935,132	\$ 28,454,668	\$ (15,519,536)	\$ (15,519,536)	
28 June 30, 2009	\$638,355,514	\$33,158,646	\$ 12,767,110	\$ 663,173	\$ 13,430,283	\$ 28,454,668	\$ (15,024,385)	\$ (30,543,921)	
27 June 30, 2010	\$667,081,513	\$30,361,724	\$ 15,876,540	\$ 722,609	\$ 16,599,149	\$ 28,454,668	\$ (11,855,519)	\$ (42,399,440)	
26 June 30, 2011	\$697,100,181	\$27,479,238	\$ 16,590,984	\$ 654,006	\$ 17,244,990	\$ 28,454,668	\$ (11,209,678)	\$ (53,609,117)	
25 June 30, 2012	\$728,469,689	\$24,851,205	\$ 17,337,579	\$ 591,459	\$ 17,929,037	\$ 28,454,668	\$ (10,525,631)	\$ (64,134,748)	
24 June 30, 2013	\$761,250,825	\$22,127,790	\$ 18,117,770	\$ 526,641	\$ 18,644,411	\$ 28,454,668	\$ (9,810,257)	\$ (73,945,005)	
23 June 30, 2014	\$795,507,112	\$19,623,170	\$ 18,933,069	\$ 467,031	\$ 19,400,101	\$ 28,454,668	\$ (9,054,567)	\$ (82,999,572)	
22 June 30, 2015	\$831,304,932	\$17,257,801	\$ 19,785,057	\$ 410,736	\$ 20,195,793	\$ 28,454,668	\$ (8,258,875)	\$ (91,258,447)	
21 June 30, 2016	\$868,713,654	\$15,072,626	\$ 20,675,385	\$ 358,728	\$ 21,034,113	\$ 28,454,668	\$ (7,420,554)	\$ (98,679,001)	
20 June 30, 2017	\$907,805,768	\$13,028,623	\$ 21,605,777	\$ 310,081	\$ 21,915,859	\$ 28,454,668	\$ (6,538,809)	\$ (105,217,811)	
19 June 30, 2018	\$948,657,028	\$11,012,210	\$ 22,578,037	\$ 262,091	\$ 22,840,128	\$ 28,454,668	\$ (5,614,540)	\$ (110,832,351)	
18 June 30, 2019	\$991,346,594	\$9,282,627	\$ 23,594,049	\$ 220,927	\$ 23,814,975	\$ 28,454,668	\$ (4,639,692)	\$ (115,472,043)	
17 June 30, 2020	\$1,035,957,191	\$7,744,407	\$ 24,655,781	\$ 184,317	\$ 24,840,098	\$ 28,454,668	\$ (3,614,570)	\$ (119,086,613)	
16 June 30, 2021	\$1,082,575,264	\$6,460,927	\$ 25,765,291	\$ 153,770	\$ 25,919,061	\$ 28,454,668	\$ (2,535,607)	\$ (121,622,220)	
15 June 30, 2022	\$1,131,291,151	\$5,414,886	\$ 26,924,729	\$ 128,874	\$ 27,053,604	\$ 28,454,668	\$ (1,401,064)	\$ (123,023,284)	
14 June 30, 2023	\$1,182,198,253	\$4,448,153	\$ 28,136,342	\$ 105,866	\$ 28,242,208	\$ 28,454,668	\$ (212,460)	\$ (123,235,744)	
13 June 30, 2024	\$1,235,398,219	\$3,654,129	\$ 29,402,478	\$ 86,968	\$ 29,489,446	\$ 28,454,668	\$ 1,034,778	\$ (122,200,966)	
12 June 30, 2025	\$1,290,991,139	\$3,001,404	\$ 30,725,589	\$ 71,433	\$ 30,797,023	\$ 28,454,668	\$ 2,342,355	\$ (119,858,611)	
11 June 30, 2026	\$1,349,085,741	\$2,384,225	\$ 32,108,241	\$ 56,745	\$ 32,164,985	\$ 28,454,668	\$ 3,710,317	\$ (116,148,294)	
10 June 30, 2027	\$1,409,794,599	\$1,931,294	\$ 33,553,111	\$ 45,965	\$ 33,599,076	\$ 28,454,668	\$ 5,144,408	\$ (111,003,886)	
9 June 30, 2028	\$1,473,235,356	\$1,498,867	\$ 35,063,001	\$ 35,673	\$ 35,098,675	\$ 28,454,668	\$ 6,644,007	\$ (104,359,879)	
8 June 30, 2029	\$1,539,530,947	\$1,221,484	\$ 36,640,837	\$ 29,071	\$ 36,669,908	\$ 28,454,668	\$ 8,215,240	\$ (96,144,639)	
7 June 30, 2030	\$1,608,809,839	\$979,400	\$ 38,289,674	\$ 23,310	\$ 38,312,984	\$ 28,454,668	\$ 9,858,316	\$ (86,286,323)	
6 June 30, 2031	\$1,681,206,282	\$748,285	\$ 40,012,710	\$ 17,809	\$ 40,030,519	\$ 28,454,668	\$ 11,575,851	\$ (74,710,472)	
5 June 30, 2032	\$1,756,860,565	\$603,262	\$ 41,813,281	\$ 14,358	\$ 41,827,639	\$ 28,454,668	\$ 13,372,971	\$ (61,337,501)	
4 June 30, 2033	\$1,835,919,290	\$486,237	\$ 43,694,879	\$ 11,572	\$ 43,706,452	\$ 28,454,668	\$ 15,251,784	\$ (46,085,718)	
3 June 30, 2034	\$1,918,535,658	\$360,973	\$ 45,661,149	\$ 8,591	\$ 45,669,740	\$ 28,454,668	\$ 17,215,072	\$ (28,870,646)	
2 June 30, 2035	\$2,004,869,763	\$262,682	\$ 47,715,900	\$ 6,252	\$ 47,722,152	\$ 28,454,668	\$ 19,267,484	\$ (9,603,161)	
1 June 30, 2036	\$2,095,088,902	\$191,155	\$ 49,863,116	\$ 4,549	\$ 49,867,665	\$ 28,454,668	\$ 21,412,997	\$ 11,809,836	
0 June 30, 2037	\$2,189,367,902	\$139,104	\$ 52,106,956	\$ 3,311	\$ 52,110,267	\$ 28,454,668	\$ 23,655,599	\$ 35,465,435	
				\$ 889,105,473		\$ 853,640,038	\$ 35,465,435		

* Teachers' Retirement System: State of Montana - ACTUARIAL VALUATION (As of July 1, 2006)

Table 2.3
Estimates of contribution rate increases and pension bonds
PERS & TRS COMBINED

PERS ASSUMPTIONS	
Supplemental rate 7/1/2007 @	0.56%
Supplemental rate 7/1/2009 @	1.13%
30-yr. taxable bonds @	6.00%
Bond principal	\$266,000,000
Monthly payment	\$1,594,804
Annual payment	\$ 19,137,653

TRS ASSUMPTIONS	
Supplemental rate 7/1/2007 @	2.00%
Supplemental rate 7/1/2009 @	2.38%
30-yr. taxable bonds @	6.00%
Bond principal	\$395,500,000
Monthly payment	\$2,371,222
Annual payment	\$ 28,454,668

PERS and TRS Combined

Fiscal Year End	State*	MUS*	Local Gov't**	PERS and TRS Combined	
				MUS	Estimated Additional Contributions
29 June 30, 2008	\$1,047,741,203	\$135,343,164	\$480,679,310	\$1,274,739	\$2,691,804
28 June 30, 2009	\$1,093,797,370	\$136,838,492	\$501,108,181	\$1,243,780	\$2,806,206
27 June 30, 2010	\$1,141,879,648	\$138,447,964	\$522,405,278	\$1,241,759	\$2,903,180
26 June 30, 2011	\$1,192,077,236	\$140,159,143	\$544,607,503	\$1,218,225	\$3,026,579
25 June 30, 2012	\$1,244,269	\$142,320,006	\$567,753,322	\$1,168,532	\$3,145,613
24 June 30, 2013	\$1,289,194,982	\$144,589,015	\$591,882,888	\$1,196,539	\$3,268,276
23 June 30, 2014	\$1,356,313,896	\$147,288,997	\$617,037,858	\$1,270,186	\$3,392,528
22 June 30, 2015	\$1,415,946,004	\$150,349,426	\$643,261,967	\$1,391,501	\$3,516,033
21 June 30, 2016	\$1,478,201,972	\$153,820,645	\$670,600,601	\$1,562,603	\$3,641,581
20 June 30, 2017	\$1,543,197,339	\$157,673,433	\$699,101,126	\$1,785,702	\$3,769,843
19 June 30, 2018	\$1,611,052,741	\$161,804,424	\$728,812,924	\$3,063,109	\$3,896,043
18 June 30, 2019	\$1,681,894,125	\$166,483,510	\$759,787,474	\$3,397,236	\$4,023,598
17 June 30, 2020	\$1,755,852,992	\$171,626,328	\$792,078,441	\$3,790,604	\$4,150,486
16 June 30, 2021	\$1,833,066,637	\$177,307,829	\$825,741,775	\$3,245,844	\$4,284,340
15 June 30, 2022	\$1,913,678,407	\$183,522,782	\$860,835,800	\$3,765,705	\$4,411,494
14 June 30, 2023	\$1,987,837,967	\$190,125,634	\$897,421,322	\$3,353,060	\$2,204,022
13 June 30, 2024	\$2,085,701,579	\$197,222,903	\$935,561,728	\$3,906,906	\$2,074,295
12 June 30, 2025	\$2,177,432,392	\$204,796,851	\$975,323,102	\$40,742,375	\$2,351,722
11 June 30, 2026	\$2,273,200,747	\$212,755,978	\$1,016,774,333	\$42,550,740	\$2,433,945
10 June 30, 2027	\$2,373,184,492	\$221,243,847	\$1,059,987,243	\$44,439,417	\$2,524,197
9 June 30, 2028	\$2,477,569,320	\$230,132,203	\$1,105,036,700	\$46,411,975	\$2,619,230
8 June 30, 2029	\$2,586,549,104	\$239,571,737	\$1,152,000,760	\$48,472,142	\$2,722,429
7 June 30, 2030	\$2,700,326,268	\$249,459,539	\$1,200,960,792	\$50,623,810	\$2,831,135
6 June 30, 2031	\$2,819,112,159	\$259,788,830	\$1,252,001,626	\$52,871,046	\$2,944,967
5 June 30, 2032	\$2,943,127,442	\$270,653,030	\$1,305,211,695	\$55,218,097	\$3,065,920
4 June 30, 2033	\$3,072,602,509	\$282,013,120	\$1,360,683,192	\$57,669,399	\$3,192,826
3 June 30, 2034	\$3,207,777,914	\$293,852,749	\$1,418,512,228	\$60,229,586	\$3,325,048
2 June 30, 2035	\$3,348,904,815	\$306,227,858	\$1,478,798,998	\$62,903,496	\$3,463,658
1 June 30, 2036	\$3,496,245,444	\$319,159,851	\$1,541,647,955	\$65,696,185	\$3,608,896
0 June 30, 2037	\$3,650,073,597	\$332,663,970	\$1,607,167,993	\$68,612,930	\$3,760,842

PERS and TRS Combined

Fiscal Year End	State*	MUS*	Local Gov't	PERS and TRS Combined	
				Total	Difference
29 June 30, 2008	\$1,274,739	\$2,691,804	\$ 18,630,372	\$ 47,592,321	\$ (28,961,949)
28 June 30, 2009	\$2,006,206	\$19,367,571	\$ 47,592,321	\$ 47,592,321	\$ (28,224,750)
27 June 30, 2010	\$29,088,922	\$29,088,922	\$ 47,592,321	\$ 47,592,321	\$ (75,690,098)
26 June 30, 2011	\$30,265,579	\$30,265,579	\$ 47,592,321	\$ 47,592,321	\$ (71,326,742)
25 June 30, 2012	\$31,503,001	\$31,503,001	\$ 47,592,321	\$ 47,592,321	\$ (61,089,320)
24 June 30, 2013	\$32,795,268	\$32,795,268	\$ 47,592,321	\$ 47,592,321	\$ (61,797,053)
23 June 30, 2014	\$34,152,369	\$34,152,369	\$ 47,592,321	\$ 47,592,321	\$ (61,439,524)
22 June 30, 2015	\$35,575,033	\$35,575,033	\$ 47,592,321	\$ 47,592,321	\$ (62,017,288)
21 June 30, 2016	\$37,066,971	\$37,066,971	\$ 47,592,321	\$ 47,592,321	\$ (60,525,350)
20 June 30, 2017	\$38,630,112	\$38,630,112	\$ 47,592,321	\$ 47,592,321	\$ (68,848,010)
19 June 30, 2018	\$40,264,737	\$40,264,737	\$ 47,592,321	\$ 47,592,321	\$ (7,327,583)
18 June 30, 2019	\$41,980,131	\$41,980,131	\$ 47,592,321	\$ 47,592,321	\$ (5,612,190)
17 June 30, 2020	\$43,777,273	\$43,777,273	\$ 47,592,321	\$ 47,592,321	\$ (3,815,048)
16 June 30, 2021	\$45,661,066	\$45,661,066	\$ 47,592,321	\$ 47,592,321	\$ (1,931,255)
15 June 30, 2022	\$47,634,643	\$47,634,643	\$ 47,592,321	\$ 47,592,321	\$ (42,323)
14 June 30, 2023	\$49,697,942	\$49,697,942	\$ 47,592,321	\$ 47,592,321	\$ (2,105,622)
13 June 30, 2024	\$51,857,049	\$51,857,049	\$ 47,592,321	\$ 47,592,321	\$ (4,264,728)
12 June 30, 2025	\$54,115,248	\$54,115,248	\$ 47,592,321	\$ 47,592,321	\$ (17,598,486)
11 June 30, 2026	\$56,474,236	\$56,474,236	\$ 47,592,321	\$ 47,592,321	\$ (16,716,572)
10 June 30, 2027	\$58,941,470	\$58,941,470	\$ 47,592,321	\$ 47,592,321	\$ (11,349,149)
9 June 30, 2028	\$61,518,120	\$61,518,120	\$ 47,592,321	\$ 47,592,321	\$ (10,441,623)
8 June 30, 2029	\$64,212,179	\$64,212,179	\$ 47,592,321	\$ 47,592,321	\$ (16,619,859)
7 June 30, 2030	\$67,025,802	\$67,025,802	\$ 47,592,321	\$ 47,592,321	\$ (104,388,283)
6 June 30, 2031	\$69,963,632	\$69,963,632	\$ 47,592,321	\$ 47,592,321	\$ (82,016,972)
5 June 30, 2032	\$73,032,909	\$73,032,909	\$ 47,592,321	\$ 47,592,321	\$ (56,576,384)
4 June 30, 2033	\$76,237,946	\$76,237,946	\$ 47,592,321	\$ 47,592,321	\$ (27,930,759)
3 June 30, 2034	\$79,583,823	\$79,583,823	\$ 47,592,321	\$ 47,592,321	\$ (31,991,502)
2 June 30, 2035	\$83,077,583	\$83,077,583	\$ 47,592,321	\$ 47,592,321	\$ (35,485,263)
1 June 30, 2036	\$86,725,702	\$86,725,702	\$ 47,592,321	\$ 47,592,321	\$ (39,133,382)
0 June 30, 2037	\$90,534,770	\$90,534,770	\$ 47,592,321	\$ 47,592,321	\$ (42,942,450)

\$ 1,427,769,621

* Data from fiscal note for HB 159, assumption #5

** Data from fiscal note for HB 159, assumption #5 and Teachers' Retirement System: State of Montana - ACTUARIAL VALUATION (As of July 1, 2006)

Table 3.1
Estimates of contribution rate increases and pension bonds
PERS

ASSUMPTIONS							
Supplemental rate 7/1/2007 @	0.56%						
Supplemental rate 7/1/2009 @	1.13%						
Growth rate - wages	4.25%						
30-yr. taxable bonds @	6.00%						
Bond principal	\$266,000,000						
Monthly payment	\$1,594,804						
Annual payment	\$ 19,137,653						
Estimated Additional Contributions				Cumulative Bond Debt Service			
Fiscal Year End	Covered Payroll			Bond Debt Service	Bond Debt Service	Annual Difference	Cumulative Difference
29 06/30/08	\$957,158,541	\$ 5,360,088	\$ 19,137,653	\$ 19,137,653	\$ (13,777,565)	\$ (13,777,565)	
28 06/30/09	\$997,837,779	\$ 5,587,892	\$ 19,137,653	\$ 38,275,306	\$ (13,549,761)	\$ (27,327,326)	
27 06/30/10	\$1,040,245,885	\$ 11,754,778	\$ 19,137,653	\$ 57,412,958	\$ (7,382,874)	\$ (34,710,200)	
26 06/30/11	\$1,084,456,335	\$ 12,254,357	\$ 19,137,653	\$ 76,550,611	\$ (6,883,296)	\$ (41,593,497)	
25 06/30/12	\$1,130,545,729	\$ 12,775,167	\$ 19,137,653	\$ 95,688,264	\$ (6,362,486)	\$ (47,955,983)	
24 06/30/13	\$1,178,593,922	\$ 13,318,111	\$ 19,137,653	\$ 114,825,917	\$ (5,819,541)	\$ (53,775,524)	
23 06/30/14	\$1,228,684,164	\$ 13,884,131	\$ 19,137,653	\$ 133,963,569	\$ (5,253,522)	\$ (59,029,046)	
22 06/30/15	\$1,280,903,241	\$ 14,474,207	\$ 19,137,653	\$ 153,101,222	\$ (4,663,446)	\$ (63,692,492)	
21 06/30/16	\$1,335,341,629	\$ 15,089,360	\$ 19,137,653	\$ 172,238,875	\$ (4,048,292)	\$ (67,740,784)	
20 06/30/17	\$1,392,093,648	\$ 15,730,658	\$ 19,137,653	\$ 191,376,528	\$ (3,406,995)	\$ (71,147,779)	
19 06/30/18	\$1,451,257,628	\$ 16,399,211	\$ 19,137,653	\$ 210,514,180	\$ (2,738,442)	\$ (73,886,220)	
18 06/30/19	\$1,512,936,077	\$ 17,096,178	\$ 19,137,653	\$ 229,651,833	\$ (2,041,475)	\$ (75,927,695)	
17 06/30/20	\$1,577,235,861	\$ 17,822,765	\$ 19,137,653	\$ 248,789,486	\$ (1,314,888)	\$ (77,242,583)	
16 06/30/21	\$1,644,268,385	\$ 18,580,233	\$ 19,137,653	\$ 267,927,139	\$ (557,420)	\$ (77,800,003)	
15 06/30/22	\$1,714,149,791	\$ 19,369,893	\$ 19,137,653	\$ 287,064,791	\$ 232,240	\$ (77,567,763)	
14 06/30/23	\$1,787,001,157	\$ 20,193,113	\$ 19,137,653	\$ 306,202,444	\$ 1,055,460	\$ (76,512,303)	
13 06/30/24	\$1,862,948,706	\$ 21,051,320	\$ 19,137,653	\$ 325,340,097	\$ 1,913,668	\$ (74,598,635)	
12 06/30/25	\$1,942,124,026	\$ 21,946,001	\$ 19,137,653	\$ 344,477,750	\$ 2,808,349	\$ (71,790,286)	
11 06/30/26	\$2,024,664,297	\$ 22,878,707	\$ 19,137,653	\$ 363,615,402	\$ 3,741,054	\$ (68,049,233)	
10 06/30/27	\$2,110,712,530	\$ 23,851,052	\$ 19,137,653	\$ 382,753,055	\$ 4,713,399	\$ (63,335,834)	
9 06/30/28	\$2,200,417,813	\$ 24,864,721	\$ 19,137,653	\$ 401,890,708	\$ 5,727,069	\$ (57,608,765)	
8 06/30/29	\$2,293,935,570	\$ 25,921,472	\$ 19,137,653	\$ 421,028,361	\$ 6,783,819	\$ (50,824,946)	
7 06/30/30	\$2,391,427,831	\$ 27,023,134	\$ 19,137,653	\$ 440,166,014	\$ 7,885,482	\$ (42,939,464)	
3 06/30/34	\$2,824,629,782	\$ 31,918,317	\$ 19,137,653	\$ 516,716,625	\$ 12,780,664	\$ 585,860	
6 06/30/31	\$2,493,063,514	\$ 28,171,618	\$ 19,137,653	\$ 459,303,666	\$ 9,033,965	\$ (33,905,499)	
5 06/30/32	\$2,599,018,714	\$ 29,368,911	\$ 19,137,653	\$ 478,441,319	\$ 10,231,259	\$ (23,674,241)	
4 06/30/33	\$2,709,477,009	\$ 30,617,090	\$ 19,137,653	\$ 497,578,972	\$ 11,479,437	\$ (12,194,803)	
0 06/30/37	\$3,200,292,876	\$ 36,163,309	\$ 19,137,653	\$ 574,129,583	\$ 17,025,657	\$ 47,300,083	\$ 47,300,083

* Based on Comprehensive Annual Financial Report, MPERB, June 30, 2006; June 30, 2006, pay roll increase by 4.25% annual growth factor.

Table 3.2
Estimates of contribution rate increases and pension bonds
TRS

ASSUMPTIONS	
Supplemental rate 7/1/2007 @	2.00%
Supplemental rate 7/1/2009 @	2.38%
30-yr. taxable bonds @	6.00%
Bond principal	\$395,500,000
Monthly payment	\$2,371,222
Annual payment	\$ 28,454,668

Fiscal Year End	State*	Covered Payroll	MUS**	Estimated Additional Contributions			Bond Service	Annual Difference	Cumulative Difference
				State	MUS	Total			
29 June 30, 2008	\$610,866,521	\$35,890,074	\$12,217,330	\$ 717,801	\$ 12,935,132	\$ 28,454,668	\$ (15,519,536)	\$ (15,519,536)	\$ (15,519,536)
28 June 30, 2009	\$638,355,514	\$33,158,646	\$12,767,110	\$ 663,173	\$ 13,430,283	\$ 28,454,668	\$ (15,024,385)	\$ (30,543,921)	\$ (30,543,921)
27 June 30, 2010	\$667,081,513	\$30,361,724	\$15,876,540	\$ 722,609	\$ 16,599,149	\$ 28,454,668	\$ (11,855,519)	\$ (42,399,440)	\$ (42,399,440)
26 June 30, 2011	\$697,100,181	\$27,479,238	\$16,590,984	\$ 654,006	\$ 17,244,990	\$ 28,454,668	\$ (11,209,678)	\$ (53,609,117)	\$ (53,609,117)
25 June 30, 2012	\$728,469,689	\$24,851,205	\$17,337,579	\$ 591,459	\$ 17,929,037	\$ 28,454,668	\$ (10,525,631)	\$ (64,134,748)	\$ (64,134,748)
24 June 30, 2013	\$761,250,825	\$22,127,790	\$18,117,770	\$ 526,641	\$ 18,644,411	\$ 28,454,668	\$ (9,810,257)	\$ (73,945,005)	\$ (73,945,005)
23 June 30, 2014	\$795,507,112	\$19,623,170	\$18,933,069	\$ 467,031	\$ 19,400,101	\$ 28,454,668	\$ (9,054,567)	\$ (82,999,572)	\$ (82,999,572)
22 June 30, 2015	\$831,304,932	\$17,257,801	\$19,785,057	\$ 410,736	\$ 20,195,793	\$ 28,454,668	\$ (8,258,875)	\$ (91,258,447)	\$ (91,258,447)
21 June 30, 2016	\$868,713,654	\$15,072,626	\$20,675,385	\$ 358,728	\$ 21,034,113	\$ 28,454,668	\$ (7,420,554)	\$ (98,679,001)	\$ (98,679,001)
20 June 30, 2017	\$907,805,768	\$13,028,623	\$21,605,777	\$ 310,081	\$ 21,915,859	\$ 28,454,668	\$ (6,538,809)	\$ (105,217,811)	\$ (105,217,811)
19 June 30, 2018	\$948,657,028	\$11,012,210	\$22,578,037	\$ 262,091	\$ 22,840,128	\$ 28,454,668	\$ (5,614,540)	\$ (110,832,351)	\$ (110,832,351)
18 June 30, 2019	\$991,346,594	\$9,282,627	\$23,594,049	\$ 220,927	\$ 23,814,975	\$ 28,454,668	\$ (4,639,692)	\$ (115,472,043)	\$ (115,472,043)
17 June 30, 2020	\$1,035,957,191	\$7,744,407	\$24,655,781	\$ 184,317	\$ 24,840,098	\$ 28,454,668	\$ (3,614,570)	\$ (119,086,613)	\$ (119,086,613)
16 June 30, 2021	\$1,082,575,264	\$6,460,927	\$25,765,291	\$ 153,770	\$ 25,919,061	\$ 28,454,668	\$ (2,535,607)	\$ (121,622,220)	\$ (121,622,220)
15 June 30, 2022	\$1,131,291,151	\$5,414,886	\$26,924,729	\$ 128,874	\$ 27,053,604	\$ 28,454,668	\$ (1,401,064)	\$ (123,023,284)	\$ (123,023,284)
14 June 30, 2023	\$1,182,199,253	\$4,448,153	\$28,136,342	\$ 105,866	\$ 28,242,208	\$ 28,454,668	\$ (212,460)	\$ (123,235,744)	\$ (123,235,744)
13 June 30, 2024	\$1,235,398,219	\$3,654,129	\$29,402,478	\$ 86,968	\$ 29,489,446	\$ 28,454,668	\$ 1,034,778	\$ (122,200,966)	\$ (122,200,966)
12 June 30, 2025	\$1,290,991,139	\$3,001,404	\$30,725,589	\$ 71,433	\$ 30,797,023	\$ 28,454,668	\$ 2,342,355	\$ (119,858,611)	\$ (119,858,611)
11 June 30, 2026	\$1,349,085,741	\$2,384,225	\$32,108,241	\$ 56,745	\$ 32,164,985	\$ 28,454,668	\$ 3,710,317	\$ (116,148,294)	\$ (116,148,294)
10 June 30, 2027	\$1,409,794,599	\$1,931,294	\$33,553,111	\$ 45,965	\$ 33,599,076	\$ 28,454,668	\$ 5,144,408	\$ (111,003,886)	\$ (111,003,886)
9 June 30, 2028	\$1,473,235,356	\$1,498,867	\$35,063,001	\$ 35,673	\$ 35,098,675	\$ 28,454,668	\$ 6,644,007	\$ (104,359,879)	\$ (104,359,879)
8 June 30, 2029	\$1,539,530,947	\$1,221,484	\$36,640,837	\$ 29,071	\$ 36,669,908	\$ 28,454,668	\$ 8,215,240	\$ (96,144,639)	\$ (96,144,639)
7 June 30, 2030	\$1,608,809,839	\$979,400	\$38,289,674	\$ 23,310	\$ 38,312,984	\$ 28,454,668	\$ 9,858,316	\$ (86,286,323)	\$ (86,286,323)
6 June 30, 2031	\$1,681,206,282	\$748,285	\$40,012,710	\$ 17,809	\$ 40,030,519	\$ 28,454,668	\$ 11,575,851	\$ (74,710,472)	\$ (74,710,472)
5 June 30, 2032	\$1,756,860,565	\$603,262	\$41,813,281	\$ 14,358	\$ 41,827,639	\$ 28,454,668	\$ 13,372,971	\$ (61,337,501)	\$ (61,337,501)
4 June 30, 2033	\$1,835,919,290	\$486,237	\$43,694,879	\$ 11,572	\$ 43,706,452	\$ 28,454,668	\$ 15,251,784	\$ (46,085,718)	\$ (46,085,718)
3 June 30, 2034	\$1,918,535,658	\$360,973	\$45,661,149	\$ 8,591	\$ 45,669,740	\$ 28,454,668	\$ 17,215,072	\$ (28,870,646)	\$ (28,870,646)
2 June 30, 2035	\$2,004,869,763	\$262,682	\$47,715,900	\$ 6,252	\$ 47,722,152	\$ 28,454,668	\$ 19,267,484	\$ (9,603,161)	\$ (9,603,161)
1 June 30, 2036	\$2,095,088,902	\$191,155	\$49,863,116	\$ 4,549	\$ 49,867,665	\$ 28,454,668	\$ 21,412,997	\$ 11,809,836	\$ 11,809,836
0 June 30, 2037	\$2,189,367,902	\$139,104	\$52,106,956	\$ 3,311	\$ 52,110,267	\$ 28,454,668	\$ 23,655,599	\$ 35,465,435	\$ 35,465,435
					\$ 889,105,473		\$ 853,640,038		

* Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2006, Table 8, p. 60.

** Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2005, Table 10.

Table 3.3
Estimates of contribution rate increases and pension bonds
PERS & TRS COMBINED

PERS ASSUMPTIONS		TRS ASSUMPTIONS	
Supplemental rate 7/1/2007 @	0.56%	Supplemental rate 7/1/2007 @	2.00%
Supplemental rate 7/1/2009 @	1.13%	Supplemental rate 7/1/2009 @	2.38%
30-yr. taxable bonds @	6.00%	Bond principal	6.00%
Bond principal	\$266,000,000	Monthly payment	\$395,500,000
Monthly payment	\$1,594,804	Annual payment	\$2,371,222
Annual payment	\$ 19,137,653		\$ 28,454,668

PERS and TRS Combined		TRS ASSUMPTIONS	
Fiscal Year	End	Covered Payroll	MUS*
29	June 30, 2008	\$1,568,025,062	\$35,890,074
28	June 30, 2009	\$1,636,193,293	\$33,158,646
27	June 30, 2010	\$1,707,327,398	\$30,361,724
26	June 30, 2011	\$1,781,556,516	\$27,479,238
25	June 30, 2012	\$1,859,015,418	\$24,851,205
24	June 30, 2013	\$1,939,844,747	\$22,127,790
23	June 30, 2014	\$2,024,191,276	\$19,623,170
22	June 30, 2015	\$2,112,208,173	\$17,257,801
21	June 30, 2016	\$2,204,055,283	\$15,072,626
20	June 30, 2017	\$2,299,899,416	\$13,028,623
19	June 30, 2018	\$2,399,914,656	\$11,012,210
18	June 30, 2019	\$2,504,282,671	\$9,282,627
17	June 30, 2020	\$2,613,193,052	\$7,744,407
16	June 30, 2021	\$2,726,843,649	\$6,460,927
15	June 30, 2022	\$2,845,440,942	\$5,414,886
14	June 30, 2023	\$2,969,200,410	\$4,448,153
13	June 30, 2024	\$3,098,346,925	\$3,654,129
12	June 30, 2025	\$3,233,115,165	\$3,001,404
11	June 30, 2026	\$3,373,750,038	\$2,384,225
10	June 30, 2027	\$3,520,507,129	\$1,931,294
9	June 30, 2028	\$3,673,653,169	\$1,498,867
8	June 30, 2029	\$3,833,466,517	\$1,221,484
7	June 30, 2030	\$4,000,237,670	\$979,400
6	June 30, 2031	\$4,174,269,796	\$748,285
5	June 30, 2032	\$4,355,879,279	\$603,262
4	June 30, 2033	\$4,545,396,299	\$486,237
3	June 30, 2034	\$4,743,165,440	\$360,973
2	June 30, 2035	\$4,949,546,310	\$262,682
1	June 30, 2036	\$5,164,914,203	\$191,155
0	June 30, 2037	\$5,389,660,778	\$139,104

	PERS and TRS Combined			Bond Service	Annual Difference	Cumulative Difference
	Estimated	Additional Contributions	Total			
	\$17,577,418	\$717,801	\$18,295,220	\$47,592,321	\$ (29,297,101)	\$ (29,297,101)
	\$663,173	\$19,018,175	\$28,353,928	\$47,592,321	\$ (28,574,146)	\$ (57,871,247)
	\$722,609	\$29,499,347	\$47,592,321	\$47,592,321	\$ (19,238,393)	\$ (77,109,640)
	\$654,006	\$30,704,204	\$47,592,321	\$47,592,321	\$ (18,092,974)	\$ (95,202,614)
	\$591,459	\$31,962,522	\$47,592,321	\$47,592,321	\$ (16,888,117)	\$ (112,090,731)
	\$526,641	\$33,284,232	\$47,592,321	\$47,592,321	\$ (15,629,798)	\$ (127,720,529)
	\$467,031	\$34,670,000	\$47,592,321	\$47,592,321	\$ (14,308,089)	\$ (142,028,618)
	\$410,736	\$36,123,474	\$47,592,321	\$47,592,321	\$ (12,922,321)	\$ (154,950,939)
	\$358,728	\$37,646,517	\$47,592,321	\$47,592,321	\$ (11,468,847)	\$ (166,419,786)
	\$310,081	\$39,239,339	\$47,592,321	\$47,592,321	\$ (9,945,804)	\$ (176,365,590)
	\$262,091	\$40,911,153	\$47,592,321	\$47,592,321	\$ (8,352,982)	\$ (184,718,571)
	\$220,927	\$42,662,863	\$47,592,321	\$47,592,321	\$ (6,681,168)	\$ (191,399,739)
	\$184,317	\$44,499,294	\$47,592,321	\$47,592,321	\$ (4,929,457)	\$ (196,329,196)
	\$153,770	\$46,423,496	\$47,592,321	\$47,592,321	\$ (3,093,027)	\$ (199,422,223)
	\$128,874	\$48,435,321	\$47,592,321	\$47,592,321	\$ (1,168,824)	\$ (200,591,047)
	\$105,866	\$50,540,766	\$47,592,321	\$47,592,321	\$ 843,001	\$ (199,748,047)
	\$86,968	\$52,743,024	\$47,592,321	\$47,592,321	\$ 2,948,446	\$ (196,799,601)
	\$71,433	\$56,745	\$55,043,692	\$55,043,692	\$ 5,150,703	\$ (191,648,898)
	\$52,071	\$57,450,128	\$47,592,321	\$47,592,321	\$ 7,451,371	\$ (184,197,527)
	\$35,673	\$59,963,396	\$47,592,321	\$47,592,321	\$ 9,857,807	\$ (174,339,719)
	\$29,071	\$62,591,380	\$47,592,321	\$47,592,321	\$ 12,371,075	\$ (161,968,644)
	\$23,310	\$65,336,118	\$47,592,321	\$47,592,321	\$ 23,604,230	\$ (85,011,742)
	\$17,809	\$68,202,136	\$47,592,321	\$47,592,321	\$ 26,731,221	\$ (58,280,521)
	\$14,358	\$71,196,551	\$47,592,321	\$47,592,321	\$ 29,955,736	\$ (28,284,785)
	\$11,572	\$74,323,542	\$47,592,321	\$47,592,321	\$ 33,404,676	\$ 5,119,891
	\$8,591	\$77,588,056	\$47,592,321	\$47,592,321	\$ 36,964,371	\$ 42,084,262
	\$6,252	\$80,996,997	\$47,592,321	\$47,592,321	\$ 40,681,256	\$ 82,765,517
	\$4,549	\$84,556,691	\$47,592,321	\$47,592,321		
	\$3,311	\$88,273,576	\$47,592,321	\$47,592,321		
					\$ 1,427,769,621	\$ 1,427,769,621

* Based on Comprehensive Annual Financial Report, MPERB, June 30, 2006; June 30, 2006, payroll increase by 4.25% annual growth factor; Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2006.
** Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2005, Table 10.

PERS
Table 4.1
Estimates of contribution rate increases and pension bonds

ASSUMPTIONS		
Supplemental rate 7/1/2007 @	0.56%	
Supplemental rate 7/1/2009 @	1.13%	
Growth rate - wages	4.25%	
30-yr. taxable bonds @	6.00%	
Bond principal	\$266,000,000	
Monthly payment	\$1,594,804	
Annual payment	\$ 19,137,653	

Fiscal Year End	Covered Payroll*	Estimated Additional Contributions	Cumulative			Annual Difference	Cumulative Difference
			Bond Debt Service	Bond Debt Service	Bond Debt Service		
29 06/30/08	\$ 1,017,007,082	\$ 5,695,240	\$ 19,137,653	\$ 19,137,653	\$ 19,137,653	\$ (13,442,413)	\$ (13,442,413)
28 06/30/09	\$ 1,060,229,883	\$ 5,937,287	\$ 19,137,653	\$ 38,275,306	\$ (13,200,365)	\$ (26,642,779)	
27 06/30/10	\$ 1,105,289,653	\$ 12,489,773	\$ 19,137,653	\$ 57,412,958	\$ (6,647,880)	\$ (33,290,658)	
26 06/30/11	\$ 1,152,264,463	\$ 13,020,588	\$ 19,137,653	\$ 76,550,611	\$ (6,117,064)	\$ (39,407,723)	
25 06/30/12	\$ 1,201,235,703	\$ 13,573,963	\$ 19,137,653	\$ 95,688,264	\$ (5,563,689)	\$ (44,971,412)	
24 06/30/13	\$ 1,252,288,220	\$ 14,150,857	\$ 19,137,653	\$ 114,825,917	\$ (4,986,796)	\$ (49,958,208)	
23 06/30/14	\$ 1,305,510,470	\$ 14,752,268	\$ 19,137,653	\$ 133,963,569	\$ (4,385,384)	\$ (54,343,592)	
22 06/30/15	\$ 1,360,994,665	\$ 15,379,240	\$ 19,137,653	\$ 153,101,222	\$ (3,758,413)	\$ (58,102,005)	
21 06/30/16	\$ 1,418,836,938	\$ 16,032,857	\$ 19,137,653	\$ 172,238,875	\$ (3,104,795)	\$ (61,206,801)	
20 06/30/17	\$ 1,479,137,508	\$ 16,714,254	\$ 19,137,653	\$ 191,376,528	\$ (2,423,399)	\$ (63,630,200)	
19 06/30/18	\$ 1,542,000,852	\$ 17,424,610	\$ 19,137,653	\$ 210,514,180	\$ (1,713,043)	\$ (65,343,243)	
18 06/30/19	\$ 1,607,535,888	\$ 18,165,156	\$ 19,137,653	\$ 229,651,833	\$ (972,497)	\$ (66,315,740)	
17 06/30/20	\$ 1,675,856,163	\$ 18,937,175	\$ 19,137,653	\$ 248,789,486	\$ (200,478)	\$ (66,516,218)	
16 06/30/21	\$ 1,747,080,050	\$ 19,742,005	\$ 19,137,653	\$ 267,927,139	\$ 604,352	\$ (65,911,866)	
15 06/30/22	\$ 1,821,330,953	\$ 20,581,040	\$ 19,137,653	\$ 287,064,791	\$ 1,443,387	\$ (64,468,479)	
14 06/30/23	\$ 1,898,737,518	\$ 21,455,734	\$ 19,137,653	\$ 306,202,444	\$ 2,318,081	\$ (62,150,398)	
13 06/30/24	\$ 1,979,433,863	\$ 22,367,603	\$ 19,137,653	\$ 325,340,097	\$ 3,229,950	\$ (58,920,448)	
12 06/30/25	\$ 2,063,559,802	\$ 23,318,226	\$ 19,137,653	\$ 344,477,750	\$ 4,180,573	\$ (54,739,875)	
11 06/30/26	\$ 2,151,261,093	\$ 24,309,250	\$ 19,137,653	\$ 363,615,402	\$ 5,171,598	\$ (49,568,278)	
10 06/30/27	\$ 2,242,689,690	\$ 25,342,393	\$ 19,137,653	\$ 382,753,055	\$ 6,204,741	\$ (43,363,537)	
9 06/30/28	\$ 2,338,004,002	\$ 26,419,445	\$ 19,137,653	\$ 401,890,708	\$ 7,281,792	\$ (36,081,744)	
8 06/30/29	\$ 2,437,369,172	\$ 27,542,272	\$ 19,137,653	\$ 421,028,361	\$ 8,404,619	\$ (27,677,125)	
7 06/30/30	\$ 2,540,957,361	\$ 28,712,818	\$ 19,137,653	\$ 440,166,014	\$ 9,575,165	\$ (18,101,960)	
6 06/30/31	\$ 2,648,948,049	\$ 29,933,113	\$ 19,137,653	\$ 459,303,666	\$ 10,795,460	\$ (7,306,500)	
5 06/30/32	\$ 2,761,528,341	\$ 31,205,270	\$ 19,137,653	\$ 478,441,319	\$ 12,067,617	\$ 4,761,118	
4 06/30/33	\$ 2,878,893,296	\$ 32,531,494	\$ 19,137,653	\$ 497,578,972	\$ 13,393,841	\$ 18,154,959	
3 06/30/34	\$ 3,001,246,261	\$ 33,914,083	\$ 19,137,653	\$ 516,716,625	\$ 14,776,430	\$ 32,931,389	
2 06/30/35	\$ 3,128,799,227	\$ 35,355,431	\$ 19,137,653	\$ 535,854,277	\$ 16,217,779	\$ 49,149,168	
1 06/30/36	\$ 3,261,773,194	\$ 36,858,037	\$ 19,137,653	\$ 554,991,930	\$ 17,720,384	\$ 66,869,552	
0 06/30/37	\$ 3,400,398,555	\$ 38,424,504	\$ 19,137,653	\$ 574,129,583	\$ 19,286,851	\$ 86,156,403	

* Based on data provided by PERB staff, 1/17/07.

Table 4.2
Estimates of contribution rate increases and pension bonds
TRS

ASSUMPTIONS		
Supplemental rate 7/1/2007 @	2.00%	
Supplemental rate 7/1/2009 @	2.38%	
30-yr. taxable bonds @	6.00%	
Bond principal	\$395,500,000	
Monthly payment	\$2,371,222	
Annual payment	\$ 28,454,668	

Fiscal Year End	State*	Covered Payroll MUS**	Estimated Additional Contributions			Bond Service	Annual Difference	Cumulative Difference
			State	MUS	Total			
29 June 30, 2008	\$610,866,521	\$35,890,074	\$12,217,330	\$ 717,801	\$ 12,935,132	\$ 28,454,668	\$ (15,519,536)	\$ (15,519,536)
28 June 30, 2009	\$638,355,514	\$33,158,646	\$12,767,110	\$ 663,173	\$ 13,430,283	\$ 28,454,668	\$ (15,024,385)	\$ (30,543,921)
27 June 30, 2010	\$667,081,513	\$30,361,724	\$15,876,540	\$ 722,609	\$ 16,599,149	\$ 28,454,668	\$ (11,855,519)	\$ (42,399,440)
26 June 30, 2011	\$697,100,181	\$27,479,238	\$16,590,984	\$ 654,006	\$ 17,244,990	\$ 28,454,668	\$ (11,209,678)	\$ (53,609,117)
25 June 30, 2012	\$728,469,689	\$24,851,205	\$17,337,579	\$ 591,459	\$ 17,929,037	\$ 28,454,668	\$ (10,525,631)	\$ (64,134,748)
24 June 30, 2013	\$761,250,825	\$22,127,790	\$18,117,770	\$ 526,641	\$ 18,644,411	\$ 28,454,668	\$ (9,810,257)	\$ (73,945,005)
23 June 30, 2014	\$795,507,112	\$19,623,170	\$18,933,069	\$ 467,031	\$ 19,400,101	\$ 28,454,668	\$ (9,054,567)	\$ (82,999,572)
22 June 30, 2015	\$831,304,932	\$17,257,801	\$19,785,057	\$ 410,736	\$ 20,195,793	\$ 28,454,668	\$ (8,258,875)	\$ (91,258,447)
21 June 30, 2016	\$868,713,654	\$15,072,626	\$20,675,385	\$ 358,728	\$ 21,034,113	\$ 28,454,668	\$ (7,420,554)	\$ (98,679,001)
20 June 30, 2017	\$907,805,768	\$13,028,623	\$21,605,777	\$ 310,081	\$ 21,915,859	\$ 28,454,668	\$ (6,538,809)	\$ (105,217,811)
19 June 30, 2018	\$948,657,028	\$11,012,210	\$22,578,037	\$ 262,091	\$ 22,840,128	\$ 28,454,668	\$ (5,614,540)	\$ (110,832,351)
18 June 30, 2019	\$991,346,594	\$9,282,627	\$23,594,049	\$ 220,927	\$ 23,814,975	\$ 28,454,668	\$ (4,639,692)	\$ (115,472,043)
17 June 30, 2020	\$1,035,957,191	\$7,744,407	\$24,655,781	\$ 184,317	\$ 24,840,098	\$ 28,454,668	\$ (3,614,570)	\$ (119,086,613)
16 June 30, 2021	\$1,082,575,264	\$6,460,927	\$25,765,291	\$ 153,770	\$ 25,919,061	\$ 28,454,668	\$ (2,535,607)	\$ (121,622,220)
15 June 30, 2022	\$1,131,291,151	\$5,414,886	\$26,924,729	\$ 128,874	\$ 27,053,604	\$ 28,454,668	\$ (1,401,064)	\$ (123,023,284)
14 June 30, 2023	\$1,182,199,253	\$4,448,153	\$28,136,342	\$ 105,866	\$ 28,242,208	\$ 28,454,668	\$ (2,12,460)	\$ (123,235,744)
13 June 30, 2024	\$1,235,398,219	\$3,654,129	\$29,402,478	\$ 86,968	\$ 29,489,446	\$ 28,454,668	\$ 1,034,778	\$ (122,200,966)
12 June 30, 2025	\$1,290,991,139	\$3,001,404	\$30,725,589	\$ 71,433	\$ 30,797,023	\$ 28,454,668	\$ 2,342,355	\$ (119,858,611)
11 June 30, 2026	\$1,349,085,741	\$2,384,225	\$32,108,241	\$ 56,745	\$ 32,164,985	\$ 28,454,668	\$ 3,710,317	\$ (116,148,294)
10 June 30, 2027	\$1,409,794,599	\$1,931,294	\$33,553,111	\$ 45,965	\$ 33,599,076	\$ 28,454,668	\$ 5,144,408	\$ (111,003,886)
9 June 30, 2028	\$1,473,235,356	\$1,498,867	\$35,063,001	\$ 35,673	\$ 35,098,675	\$ 28,454,668	\$ 6,644,007	\$ (104,359,879)
8 June 30, 2029	\$1,539,530,947	\$1,221,484	\$36,640,837	\$ 29,071	\$ 36,669,908	\$ 28,454,668	\$ 8,215,240	\$ (96,144,639)
7 June 30, 2030	\$1,608,809,839	\$979,400	\$38,289,674	\$ 23,310	\$ 38,312,984	\$ 28,454,668	\$ 9,858,316	\$ (86,286,323)
6 June 30, 2031	\$1,681,206,282	\$748,285	\$40,012,710	\$ 17,809	\$ 40,030,519	\$ 28,454,668	\$ 11,575,851	\$ (74,710,472)
5 June 30, 2032	\$1,756,860,565	\$603,262	\$41,813,281	\$ 14,358	\$ 41,827,639	\$ 28,454,668	\$ 13,372,971	\$ (61,337,501)
4 June 30, 2033	\$1,835,919,290	\$486,237	\$43,694,879	\$ 11,572	\$ 43,706,452	\$ 28,454,668	\$ 15,251,784	\$ (46,085,718)
3 June 30, 2034	\$1,918,535,658	\$360,973	\$45,661,149	\$ 8,591	\$ 45,669,740	\$ 28,454,668	\$ 17,215,072	\$ (28,870,646)
2 June 30, 2035	\$2,004,869,763	\$262,682	\$47,715,900	\$ 6,252	\$ 47,722,152	\$ 28,454,668	\$ 19,267,484	\$ (9,603,161)
1 June 30, 2036	\$2,095,088,902	\$191,155	\$49,863,116	\$ 4,549	\$ 49,867,665	\$ 28,454,668	\$ 21,412,997	\$ 11,809,836
0 June 30, 2037	\$2,189,367,902	\$139,104	\$52,106,956	\$ 3,311	\$ 52,110,267	\$ 28,454,668	\$ 23,655,599	\$ 35,465,435
							\$ 889,105,473	\$ 853,640,038

* Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2006. Table 8, p. 60.

** Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2005. Table 10.

Table 4.3
Estimates of contribution rate increases and pension bonds
PERS & TRS COMBINED

PERS ASSUMPTIONS	
Supplemental rate 7/1/2007 @	0.56%
Supplemental rate 7/1/2009 @	1.13%
30-yr. taxable bonds @	6.00%
Bond principal	\$266,000,000
Monthly payment	\$1,594,804
Annual payment	\$ 19,137,653

TRS ASSUMPTIONS	
Supplemental rate 7/1/2007 @	2.00%
Supplemental rate 7/1/2009 @	2.38%
30-yr. taxable bonds @	6.00%
Bond principal	\$395,500,000
Monthly payment	\$2,371,222
Annual payment	\$ 28,454,668

Fiscal Year End	PERS and TRS Combined			Annual Difference
	Covered Payroll*	MUS**	Total	
29 June 30, 2008	\$1,627,873,603	\$35,890,074	\$17,912,570	\$717,801 \$ 18,630,372
28 June 30, 2009	\$1,698,585,397	\$33,158,646	\$18,704,398	\$663,173 \$ 19,367,571
27 June 30, 2010	\$1,772,371,166	\$30,361,724	\$28,366,313	\$722,609 \$ 29,088,922
26 June 30, 2011	\$1,849,364,644	\$27,479,238	\$29,611,573	\$654,006 \$ 30,265,579
25 June 30, 2012	\$1,929,705,392	\$24,851,205	\$30,911,542	\$591,459 \$ 31,503,001
24 June 30, 2013	\$2,013,539,045	\$22,127,790	\$32,268,627	\$526,641 \$ 32,795,268
23 June 30, 2014	\$2,101,017,582	\$19,623,170	\$33,685,338	\$467,031 \$ 34,152,369
22 June 30, 2015	\$2,192,299,597	\$17,257,801	\$35,164,297	\$410,736 \$ 35,575,033
21 June 30, 2016	\$2,287,550,592	\$15,072,626	\$36,708,242	\$358,728 \$ 37,066,971
20 June 30, 2017	\$2,386,943,276	\$13,028,623	\$38,320,031	\$310,081 \$ 38,630,112
19 June 30, 2018	\$2,490,657,880	\$11,012,210	\$40,002,647	\$262,091 \$ 40,264,737
18 June 30, 2019	\$2,598,882,482	\$9,282,627	\$41,759,204	\$220,927 \$ 41,980,131
17 June 30, 2020	\$2,711,813,354	\$7,744,407	\$43,592,956	\$184,317 \$ 43,777,273
16 June 30, 2021	\$2,829,655,314	\$6,460,927	\$45,507,296	\$153,770 \$ 45,661,066
15 June 30, 2022	\$2,952,622,104	\$5,414,886	\$47,505,769	\$128,874 \$ 47,634,643
14 June 30, 2023	\$3,080,936,771	\$4,448,153	\$49,592,076	\$105,866 \$ 49,697,942
13 June 30, 2024	\$3,214,832,082	\$3,654,129	\$51,770,080	\$86,968 \$ 51,857,049
12 June 30, 2025	\$3,354,550,941	\$3,001,404	\$54,043,815	\$71,433 \$ 54,115,248
11 June 30, 2026	\$3,500,346,834	\$2,384,225	\$56,417,491	\$56,745 \$ 56,474,236
10 June 30, 2027	\$3,652,484,289	\$1,931,294	\$58,895,505	\$45,965 \$ 58,941,470
9 June 30, 2028	\$3,811,239,358	\$1,498,867	\$61,482,447	\$35,673 \$ 61,518,120
8 June 30, 2029	\$3,976,900,119	\$1,221,484	\$64,183,108	\$29,071 \$ 64,212,179
7 June 30, 2030	\$4,149,767,200	\$979,400	\$67,002,492	\$23,310 \$ 67,025,802
6 June 30, 2031	\$4,330,154,331	\$748,285	\$69,945,822	\$17,809 \$ 69,963,632
5 June 30, 2032	\$4,518,388,906	\$603,262	\$73,018,552	\$14,358 \$ 73,032,909
4 June 30, 2033	\$4,714,812,586	\$486,237	\$76,226,373	\$11,572 \$ 76,237,946
3 June 30, 2034	\$4,919,781,919	\$360,973	\$79,575,231	\$8,591 \$ 79,583,823
2 June 30, 2035	\$5,133,668,990	\$262,682	\$83,071,332	\$6,252 \$ 83,077,583
1 June 30, 2036	\$5,356,862,096	\$191,155	\$86,721,153	\$4,549 \$ 86,725,702
0 June 30, 2037	\$5,589,766,457	\$139,104	\$90,531,460	\$3,311 \$ 90,534,770
				\$ 1,549,391,458 \$ 1,427,769,621
				\$ 121,621,838 \$

* Based on data provided by PERB staff, 1/17/07; Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2006.

** Comprehensive Annual Financial Report: Teachers' Retirement System, Fiscal Year ended June 30, 2005. Table 10.